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By FRANK M. CHAPMAN

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1. Alaska Chickadee
2. Acadian Chickadee
3. Mexican Chickadee
4. Black-capped Chickadee
5. Carolina Chickadee
6. Mountain Chickadee
7. Chestnut-backed Chickadee

(One-half natural size)

Bird-Lore

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Some Canadian Grouse

By H. H. PITTMAN, Wauchope, Saskatchewan
With photographs by H. and E. Pittman

PRAIRIE SHARP-TAILED GROUSE SUNNING THEMSELVES ON A SNOW-COVERED HAYSTACK IN MID-WINTER.

ACCORDING to the official list, Canada has many species of Grouse, but the ranges of some of them are so difficult of access that the average traveler or settler is hardly likely to meet with all of them. The four dealt with in this article are, perhaps, the best-known members of the family, and the ones most likely to be seen during a tour through the country. Two are birds of the plains, and two are to be found in the woods and forests.

The commonest species on the plains in southern Manitoba and Saskatchewan is the Prairie Sharp-tailed Grouse (*Pediocætes phasianellus campestris*) which derives its name from the fact that the feathers of the tail are graduated so that the middle ones come to a point. In the two provinces mentioned I have found these birds very plentiful, and have seen coveys which must have contained at least fifty or sixty individuals, on many occasions. These birds are also found in Alberta. but, possibly through not knowing the province so well, I have not seen so many there.

The courtship of the Prairie Sharp-tailed Grouse is extremely interesting to watch. They have regular meeting-places, generally on bare knolls, and here coveys of the birds assemble day after day throughout the spring. When not resting, the males spend their time displaying to the hens, strutting and danc-

ing backward and forward with erected crests, drooping wings, and head and tail almost meeting, all the time uttering a peculiar clucking or gobbling call. In the distance, these calls sound very much like the confused murmur of voices of a far-away crowd of people. Spreadborough says the birds become so absorbed that it is almost impossible to drive them away at these times—even by shooting. I have seen as many as forty birds on a knoll at one time, but twenty-five or thirty is more usual.

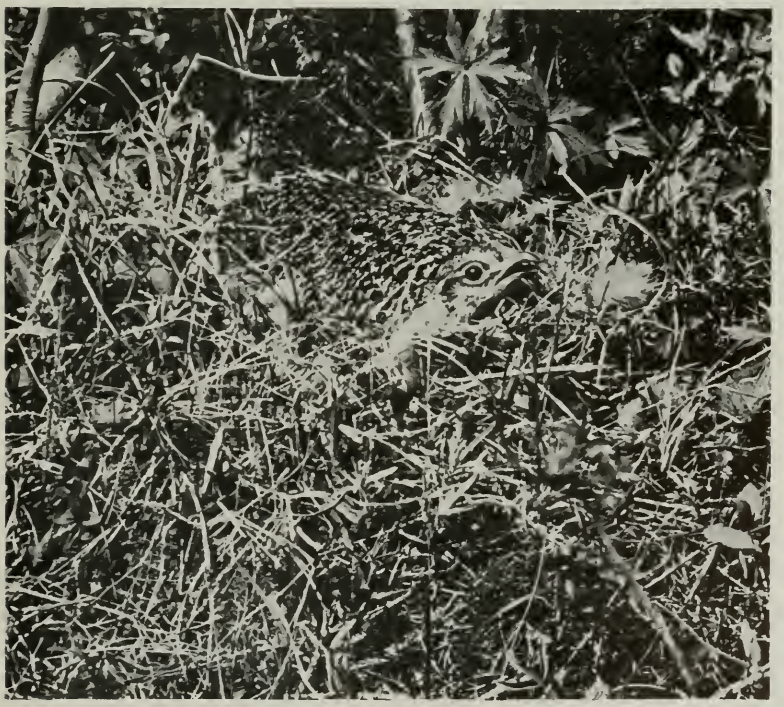
The nest is on the ground, concealed among the grass, very often in little patches of scrub; but no real nest is made. The eggs number from twelve to

PRAIRIE SHARP-TAILED GROUSE

fifteen, and are brown with dark specks, measuring about 1.75 x 1.25 inches. Frequently, after being sat upon for a time they become bleached, turning to a dirty-white color. The hen sits very closely, and will allow herself to be almost touched before rising. Great numbers of these birds are killed for sport during the short open season.

When I first went to southern Manitoba, the square-tailed Pinnated Grouse (*Tympanuchus americanus*) was the common game-bird of that portion of the prairie, and it is gradually spreading westward. Atkinson comments upon the fact that these two species do not agree well together. More recently

GRAY RUFFED GROUSE ON NEST



SHARP-TAILED GROUSE ON NEST

I have met with the Pinnated Grouse casually in Saskatchewan, but not in Alberta. Their presence, in the spring, can be easily known by their peculiar resonant booming calls, resembling the syllables "mool-doon," with the second note slightly higher than the first. The males have an air-sac on each side of their necks, which they can inflate to the size of small oranges, and it is the expulsion of the air from these sacs which makes the remarkable far-reaching calls; but, when not in use, each air-sac is covered by a tuft of feathers. These calls can be heard in every direction, from early morning until late at night. The Pinnated Grouse also dance and display at recognized meeting-places. The nest may be found among long grass, and is similar in many respects to that of the former species, and both are commonly referred to as "Prairie Chickens."

A SHARP-TAILED GROUSE IN A POPLAR

In the poplar woods and forests, the common game-bird is the Gray Ruffed Grouse (*Bonasa umbellus umbelloides*). Like the Pinnated Grouse this bird also makes its presence known in the spring; but in this case the sound—closely resembling the muffled noise of a distant motor-cycle—is made by the wings. Standing on fallen logs among the trees, with crests raised, black ruffs spread to form collars, and tails raised and spread like fans, the males make a series of loud drumming sounds at intervals, continuing throughout the spring and summer months, even after the young are hatched. When silent, these birds are very difficult to see, for they will stand absolutely motionless upon the logs where their gray and brown markings make them practically invisible if there is any undergrowth. In one way, they can hardly be called sporting birds; for not only will they run frequently in prefer-

ence to flying, but when standing still they allow for comparatively close approach, and shot after shot may be fired at them with a small rifle before they become alarmed.

Early in June, 1914, in central Alberta, I found a nest with sixteen eggs at the foot of a poplar tree and, a few days later, one with thirteen eggs, which I

GRAY RUFFED GROUSE ON DRUMMING LOG

photographed in a similar position. The nests were well-made cups of dead leaves, to which one or two soft feathers adhered; and in both cases the birds sat very closely, trusting to the resemblance of their plumage to the surroundings to escape observation.

The chicks were little balls of yellow and chestnut down, with tiny gray feathers forming on the wings. It is remarkable how early little Grouse are able to fly, for they will take wing when hardly as big as a man's fist, and although they may go only a short distance, it is almost impossible to find any of them again. The hen bird calls to the chicks with little cries, very much like the whining of a puppy.

The Hudsonian Spruce Grouse (*Canachites canadensis*), as the name suggests, are to be found in wilder woodland, where muskeg and heavy timber defy

the settler. The three birds already dealt with are killed for food, but this one, I believe, is rarely eaten, owing probably to the flavor imparted by its diet. It is also rather stupid, and when perched in the trees is sometimes knocked over with a stick. The nest is generally well hidden under the spreading branches of a spruce tree and, when the eggs have hatched, the females try to draw an intruder from the vicinity by feigning injury—a habit common to the other Grouse I have mentioned.

Canada has made excellent laws for the protection of her game birds, and if these laws are rigidly enforced she will long continue to retain them. Increasing population should not affect her Grouse; for the species found on the prairie, at any rate, benefit rather than lose by the development of the agricultural possibilities of the country. The woodland Grouse suffer a little by the removal of the timber, but the inroads made are gradual, and there will always be places suitable for them where cultivation is impossible. It is the late brush fires in the spring, carelessly allowed to get out of control, which reduce the ranks of the Ruffed and Spruce Grouse; and game laws are futile unless this very serious evil can be remedied.

PRAIRIE SHARP-TAILED GROUSE SUNNING ITSELF IN THE SNOW

That Mockingbird

By JOHN V. FREDERICK, Los Angeles, Calif.

DURING the last nesting season a Mockingbird spent most of his time on a certain chimney. Many times a day he came to the rail of our sleeping-porch to eat suet, along with other Mockingbirds and two Audubon Warblers.

He often jumped up in the air while singing, only to alight again without ever stopping his song. There came a time when for nearly a week he hardly left the chimney from daylight until dark. His trips to the suet were straight and swift, with no stops along the way. His song was just as continuous as his presence on the chimney, and his vertical flights into the air became more frequent. He would spring up from two to eight feet, drop again, alighting in the middle of one edge of the chimney, and run to the north corner, facing the north until the next flight, when he would alight in the middle again, but run to the south corner and face the south.

AUDUBON'S WARBLER

After a couple of days of this unusual activity, we timed his flights and found that he jumped twenty times in four minutes, or an average of once every twelve seconds, and this would be about the average for the whole day. In a few days, however, this all changed; for he was very busy catching bugs and worms for a new family, and he stopped coming for suet.

Two years ago two Mockingbirds would occasionally come around. Last year two pairs spent most of their time around here, and came for suet many times a day. This summer these two pairs raised their families, and a few weeks ago there were eight in our yard at one time.

One of the Audubon Warblers mentioned had a small amount of yellow in the usual places, but the other had only a trace on the sides near the wings. The face and throat were perfectly black and there was no yellow on the head. There were many others like it everywhere around here last winter. Several

good authorities said they could not have black throats, that it must be something on the feathers collected in feeding, or else they were not Audubons. These two birds traveled together much of the time, and the other one had signs of black on its face or throat. Moreover, where the yellow should have been on the sides of the black-throated one, there was no black, but the usual gray, which showed that the absence of yellow there was not due to anything on the feathers, but simply to a lack of yellow. Among all the birds for miles around, there seemed to be the two kinds, either with yellow in the normal proportions or else black, as described, with no birds showing any intermediate shades. Many students noticed the same thing, and I often watched this one with a glass at a distance of eight feet, in the same place where it was photographed. Later in the season yellow began to show, and in time it turned into a conventional Audubon Warbler.

In one of the best bird-books it is stated that the young female has less yellow and is darker, so I decided that these black-throated ones had gone a little farther, left out the yellow, and added more black, in spite of what some good authorities say.

A MOCKINGBIRD ON HIS MUSIC STAND

YOUNG CALIFORNIA BROWN PELICAN TRYING TO SWALLOW A FISH-HEAD. THE GULL APPEARS TO BE AN INTERESTED SPECTATOR

California Brown Pelicans

By MRS. F. T. BICKNELL, Los Angeles, Calif.
With photographs by the author

THE modern airship has a rival in the California Brown Pelican when it comes to power, for the sailing and diving maneuvers of this great bird are well worth a close study.

When seen on a 'practice' morning above the ocean at Redondo Beach, they give an excellent demonstration of Nature's engineering. It was my good fortune to witness the wonderful dexterity or winged skill of a fleet of a dozen of these Pelican airships—so slow of movement, awkward and ungainly on shore, but possessed of remarkable wing power. Raising their lumbering weight by a few strokes of the wing, they mounted into the air, where, in single file, they resembled an imposing fleet of warships putting out to sea in defense of their country, the brown plumage with white underparts, blending into the background of the blue-gray sky, giving a half-tone of brownish gray. With the aid of binoculars, I noted the precision in every movement. Three strokes of their powerful wings sent them coasting a long way through the air, with bills extended in a straight line more than fourteen inches beyond their bodies; again, three strokes sent them far enough out to sea to commence their separate maneuvers of circling and wheeling, with black eyes riveted upon the water, forty or more feet below.

Soon their whole aspect of precision changed to individual alertness, and with bill pointed downward and widespread wings, one shot like a torpedo from the sky, and plunged head first beneath the surface of the water, closing its wings and turning its body partly over as it disappeared beneath the waves. When it reappeared with a squirming fish in its bill, the ever-watchful Sea Gull,

YOUNG CALIFORNIA BROWN PELICAN SHOWING HOOKED BILL

who, flying close to the water, is ever in hot pursuit of the Pelican on its fishing excursions, was a 'Johnny-on-the-spot' to assist in devouring the savory meal. The Gull often snatches the fish from the Pelican's bill before the latter can lift its head and start it 'down grade' into its fish-net pouch of elastic skin, or confuses its slow thinking faculties, so that the fish falls back into the water, an easy prey to the Gull's insatiable greed. After a hearty meal, the Pelican rests upon the rocking waves with its long bill held close to its neck and its dreamy eyes looking into space—perfect contentment expressed in its dignified lassitude.

I saw a Pelican in an endeavor to fly from the water onto a buoy, miscalculate the distance. Flapping its heavy wings, it slowly gained the air; but was too near the buoy to raise itself sufficiently to alight, so slid awkwardly back into the water, then swam some twenty feet away, made a second attempt and settled upon the high-tilted end of the bobbing buoy and, with outspread wings, balanced itself until equilibrium could be maintained, when it went through a thorough preening of its feathers, like a Swan, running each long quill through its bill, then flirting the moisture from its tip into the air.

After treating each individual wing- and tail-feather to this 'dry cleaning' process, it shoved its head back and down between its wings, moved it around several times, then with its long bill proceeded to remove from the wing coverts the moisture that had come from its head.

It was then ready for another aërial flight and fishing trip. At the tip of the bill of the California brown Pelican is a round knob from which depends a hook-like prong, which is of vital importance in retaining the squirming fish. The fish-net pouch of bare skin, which hangs from the flexible sides of the lower mandible, is often punctured or torn when swallowing the head of the fish.

Among the group of Pelicans on the wharf at Redondo Beach, we observed one with a rent three inches in length. This large aquatic bird is a monoplane and hydroplane combined, and more perfect in its power of aërial locomotion than the finest aëroplane ever conceived of by man.

It is a familiar object along the beaches of southern California, and becomes quite tame upon the fishing wharfs, where, with the greedy Gulls, it is considered a good scavenger, both as to capacity and rapacity, for the fresh fish offal thrown by the fishermen into the ocean.

HOMEWARD BOUND
Photographed by Niebergall, Sandusky, Ohio

Bird-Lore's Advisory Council

WITH some slight alterations, we reprint below the names and addresses of the ornithologists forming BIRD-LORE'S 'Advisory Council,' which were first published in BIRD-LORE for February, 1900.

To those of our readers who are not familiar with the objects of the Council, we may state that it was formed for the purpose of placing students in direct communication with an authority on the bird-life of the region in which they live, to whom they might appeal for information and advice in the many difficulties which beset the isolated worker.

The success of the plan during the fifteen years that it has been in operation fully equals our expectations. From both students and members of the Council we have had very gratifying assurances of the happy results attending our efforts to bring the specialist in touch with those who appreciate the opportunity to avail themselves of his wider experience.

It is requested that all letters of inquiry to members of the Council be accompanied by a stamped and addressed envelope for use in replying.

NAMES AND ADDRESSES OF MEMBERS OF THE ADVISORY COUNCIL

UNITED STATES AND TERRITORIES

ALASKA.—Dr. C. Hart Merriam, 1919 16th St. N. W., Washington, D. C.
ARIZONA.—Harriet I. Thornber, Tucson, Ariz.
CALIFORNIA.—Joseph Grinnell, University of California, Berkeley, Cal.
CALIFORNIA.—Walter K. Fisher, Palo Alto, Cal.
COLORADO.—Dr. W. H. Bergtold, 1460 Clayton Ave., Denver, Colo.
CONNECTICUT.—J. H. Sage, Portland, Conn.
DELAWARE.—S. N. Rhoads, Haddonfield, N. J.
DISTRICT OF COLUMBIA.—Dr. C. W. Richmond, U. S. Nat'l. Mus., Washington, D. C.
FLORIDA.—Frank M. Chapman, American Museum Natural History, New York City.
FLORIDA, Western.—R. W. Williams, Jr., Talahassee, Fla.
GEORGIA.—Dr. Eugene Murphy, Augusta, Ga.
ILLINOIS, Northern.—B. T. Gault, Glen Ellyn, Ill.
ILLINOIS, Southern.—Robert Ridgway, U. S. National Museum, Washington, D. C.
INDIANA.—A. W. Butler, State House, Indianapolis, Ind.
INDIAN TERRITORY.—Prof. W. W. Cooke, Biological Survey, Washington, D. C.
IOWA.—C. R. Keyes, Mt. Vernon, Iowa.
KANSAS.—University of Kansas, Lawrence, Kan.
LOUISIANA.—Prof. George E. Beyer, Tulane University, New Orleans, La.
MAINE.—A. H. Norton, Society of Natural History, Portland, Me.
MASSACHUSETTS.—William Brewster, Cambridge, Mass.
MICHIGAN.—Prof. W. B. Barrows, Agricultural College, Mich.
MINNESOTA.—Dr. T. S. Roberts, Millard Hall University of Minn., Minneapolis, Minn.
MISSOURI.—O. Widmann, 5105 Morgan St., St. Louis, Mo.
MONTANA.—Prof. J. M. Elrod, University of Montana, Missoula, Mont.
NEBRASKA.—Dr. R. H. Walcott, University of Nebraska, Lincoln, Neb.

Nevada.—Dr. A. K. Fisher, Biological Survey, Dept. of Agr., Washington, D. C.
New Hampshire.—Dr. G. M. Allen, Boston Soc. Nat. Hist., Boston.
New Jersey, Northern.—Frank M. Chapman, Am. Mus. Nat. History, N. Y. City
New Jersey, Southern.—Witmer Stone, Academy Natural Sciences, Philadelphia, Pa
New Mexico.—Dr. A. K. Fisher, Biological Survey, Dept. of Agr., Washington, D. C.
New York, Eastern.—Dr. A. K. Fisher, Biological Survey, Washington, D. C.
New York, Western.—E. H. Eaton, Hobart College, Geneva, N. Y.
North Dakota.—Prof. O. G. Libby, University, N. D.
North Carolina.—Prof. T. G. Pearson, 1974 Broadway, New York City.
Ohio.—Prof. Lynds Jones, Oberlin College, Oberlin, Ohio.
Oklahoma.—Dr. A. K. Fisher, Biological Survey, Dept. of Agr., Washington, D. C.
Oregon.—W. L. Finley, Milwaukee, Ore.
Pennsylvania, Eastern.—Witmer Stone, Acad. Nat. Sciences, Philadelphia, Pa.
Pennsylvania, Western.—W. E. Clyde Todd, Carnegie Museum, Pittsburgh, Pa.
Rhode Island.—H. S. Hathaway, Box 1466, Providence, R. I.
South Carolina.—Dr. P. M. Rea, Charleston Museum, Charleston, S. C.
Texas.—H. P. Attwater, Houston, Tex.
Utah.—Prof. Marcus E. Jones, Salt Lake City, Utah.
Vermont.—Prof. G. H. Perkins, Burlington, Vt.
Virginia.—Dr. W. C. Rives, 1723 I Street, Washington, D. C.
Washington.—Samuel F. Rathburn, Seattle, Wash.
West Virginia.—Dr. W. C. Rives, 1723 I Street, Washington, D. C.
Wisconsin.—H. L. Ward, Public Museum, Milwaukee, Wis.

CANADA

Alberta.—G. F. Dippie, Calgary, Alta.
British Columbia.—Francis Kermode, Provincial Museum, Victoria, B. C.
Manitoba.—Ernest Thompson Seton, Greenwich, Conn.
Nova Scotia.—Harry Piers, Provincial Museum, Halifax, N. S.
Ontario, Eastern.—James H. Fleming, 267 Rusholme Road, Toronto, Ont.
Ontario, Western.—W. E. Saunders, London, Ont.
Quebec.—E. D. Wintle, 189 St. James Street, Montreal, Canada.

MEXICO

E. W. Nelson, Biological Survey, Department of Agriculture, Washington, D. C.

WEST INDIES

C. B. Cory, Field Museum, Chicago, Ill.

GREAT BRITAIN

Clinton G. Abbott, Rhinebeck, New York.

The Migration of North American Birds

Compiled by Prof. W. W. Cooke, Chiefly from Data in the Biological Survey

With a Drawing by Louis Agassiz Fuertes

(See Frontispiece)

CHICKADEE

The Chickadees of the genus *Penthestes* are among the best examples of resident birds, but not all of the individuals are strictly non-migratory. The Black-capped Chickadee (*Penthestes atricapillus atricapillus*) is the best known and has the widest distribution; including its subspecies, it ranges from ocean to ocean and from the middle United States to high northern latitudes. It has been separated into four forms: The eastern Chickadee breeds from central Missouri, northern Indiana, and northern New Jersey, north to Hudson Bay and Newfoundland; it also breeds in the Alleghanies south to North Carolina. A few individuals are found in the winter a short distance south of the breeding range.

The region of the Great Plains south to southern Kansas, east central Oregon, southern Idaho, northeastern Utah and the Rocky Mountains, south to northern New Mexico, is occupied by the long-tailed Chickadee (*P. a. septentrionalis*), extending thence northward to the Kenai Peninsula, Alaska, central Mackenzie and southwestern Keewatin. While the birds of the Rocky Mountains have only an altitudinal movement, descending during the winter one or two thousand feet below their summer home, some of the individuals breeding on the plains wander south at this season several hundred miles to central Texas. The range of the long-tailed Chickadee is cut off from the Pacific by that of the Oregon Chickadee (*P. a. occidentalis*), which extends along the coast from southern Oregon to northern British Columbia. In the far north, still a fourth form, the Yukon Chickadee (*P. a. turneri*), inhabits northwestern Alaska, north and west of Cook Inlet.

CAROLINA CHICKADEE

The southeastern United States, from the Ohio Valley southward and east of central Texas, constitutes the range of the Carolina Chickadee and its two forms or subspecies. One of these latter, the Florida Chickadee (*Penthestes carolinensis impiger*), occurs in east central Florida. The other, the Plumbeous Chickadee (*P. a. agilis*), ranges over the eastern half of Texas north of Beeville and the eastern two-thirds of Oklahoma. The remainder of the southeastern United States is occupied by the typical Carolina Chickadee (*P. c. carolinensis*) from the Gulf of Mexico north to southwestern Missouri, central Illinois, central Ohio, southwestern Pennsylvania, and central New Jersey. It is probable that this species is strictly non-migratory throughout all of its range.

MEXICAN CHICKADEE

The Mexican Chickadee (*Penthestes sclateri*) ranges over much of the higher parts of the whole of Mexico. It barely reaches the United States in the Chiricahua Mountains of southeastern Arizona and the Animas Mountains of southwestern New Mexico. It is non-migratory.

MOUNTAIN CHICKADEE

The Mountain Chickadee is well named, for it is an inhabitant of the western mountains from southern Canada, east to central Montana, and south to the southern Sierras and the mountains of Arizona, New Mexico and western Texas. This is the range of the typical form, *Penthestes gambeli gambeli*. A subspecies, Bailey's Mountain Chickadee (*P. g. baileyæ*), ranges from the mountains of southern California in Los Angeles County into the northern part of Lower California. The Mountain Chickadee is not migratory in the ordinary sense of the word; but, while most of the individuals remain in the mountains throughout the winter, some of them indeed at timber-line, others descend to the foothills, and even a few miles out on the plains.

ALASKA CHICKADEE

The Lapp Titmouse, or Chickadee (*Penthestes cinctus*) has a wide range in northern Europe and northern Asia. The few individuals which occur in extreme eastern Siberia, and across Bering Strait to northern Alaska and northwestern Mackenzie, have been separated under the name of the Alaska Chickadee (*Penthestes cinctus alascensis*). They are non-migratory, though wandering somewhat in winter, like the other members of the genus.

HUDSONIAN CHICKADEE

The Hudsonian Chickadee is the distinctive Chickadee of Canada. It occupies practically the whole forested area of that country and Alaska. It has been divided into two forms, or subspecies; those individuals that breed from southeastern Quebec and Newfoundland south to the White Mountains, the northern Green Mountains, and the Adirondacks, have received the name of the Acadian Chickadee (*Penthestes hudsonicus littoralis*), while all the others constitute the typical form, the Hudsonian Chickadee (*Penthestes hudsonicus hudsonicus*).

The movements of this Chickadee can hardly be called migrations, and yet every winter some individuals desert the mountains to wander in the lowlands south to southern New England, to become the special quest of many a bird walk and the proud boast of the fortunate observer. The typical form has been known to occur in winter south to north Illinois.

CHESTNUT-BACKED CHICKADEE

Last, but not least important, of the numerous Chickadee family is the Chestnut-backed Chickadee, which is the distinctively western species. It inhabits a narrow strip along the Pacific coast from southern Alaska to central California, occurring further inland only as a small colony found in northern Idaho and northwestern Montana. Though so restricted in range, it has been divided into four forms: The Valdez Chestnut-backed. Chickadee (*Penthestes refuscens vivax*) is the most northern, occupying the Prince William Sound region of southern Alaska. The California Chickadee (*Penthestes rufescens neglectus*) is found on the coast of California just north of San Francisco Bay, in Sonoma and Marin Counties. The district between these two subspecies is that assigned to the typical form, the Chestnut-backed Chickadee (*Penthestes rufescens rufescens*), while south of San Francisco Bay, and extending to the little Sur River south of Monterey Bay, is the home of the Barlow Chickadee (*Penthestes rufescens barlowi*). All these forms are non-migratory.

Notes on the Plumage of North American Birds

THIRTY-SIXTH PAPER

By FRANK M. CHAPMAN

(See Frontispiece)

The tameness of Chickadees, their distinctive notes, the conspicuousness of their markings which show practically no variation in color with age, sex or season, combine to make them among the most easily recognizable of birds.

There is, however, considerable geographic variation among the various species of the genus (*Penthestes*, formerly *Parus*), but, since all migrate but little, if at all, two races of the same species are not usually found associated.

Black-capped Chickadee (*Penthestes atricapillus atricapillus*. Fig. 4). As in the other species of the genus, the sexes are alike in color. The winter plumage differs from that of summer only in being more richly colored, the buffy tints being deeper, while the grayish margins on the feathers of wings and tail are wider. The young bird, on leaving the nest in its juvenal plumage resembles its parents, but the black crown-cap is duller and the plumage somewhat more fluffy. But these slight differences disappear at the postjuvenal molt, after which the young bird cannot be distinguished from its parents.

In its wide range over the greater part of North America, the Chickadee appears under the following racial names: (1) Long-tailed Chickadee (*Penthestes atricapillus septentrionalis*). A large pale form of the the Rocky Mountain region and eastward to the Mississippi. (2) Oregon Chickadee (*P. a. occidentalis*). A small, dark form of the coast of Oregon and British Colombia.

(3) Yukon Chickadee (*P. a. turneri*). A large form, paler even than the Long-tailed Chickadee, which inhabits northern and western Alaska.

Carolina Chickadee (*Penthestes carolinensis carolinensis.* Fig. 5). Although this species so closely resembles the Black-capped Chickadee that it might well be considered merely a race of it, the two kinds do not intergrade. During the winter they may both be found in a narrow strip of territory at the northern limit of the range of the southern species and the southern limit of the range of the northern species. Under these circumstances, it requires a highly trained eye to distinguish these birds by the slight difference in their size and markings, the Carolina Chickadee being smaller and without whitish margins to the wing-coverts; but to one familiar with their notes field identification is possible.

Two races of the Carolina Chickadee are known: (1) the Florida Chickadee (*Penthestes carolinensis impiger*), a small, dark form from east-central Florida, and (2) the Plumbeous Chickadee (*P. c. agilis*), a larger, paler form from the western part of the lower Mississippi Valley.

Mexican Chickadee (*Penthestes sclateri.* Fig 3). This, the most southern-of the Chickadees, may be known by its dark gray. sides and large black throat patch. No races of it have been described.

Mountain Chickadee (*Penthestes gambeli gambeli.* Fig. 6). The white line over the eye at once distinguishes this Chickadee, of which one race is known, Bailey's Mountain Chickadee (*Penthestes gambeli baileyæ*), of the "mountains of the great Basin region and northern Lower California,

Alaska Chickadee (*Penthestes cinctus alascensis.* Fig. 1). This is an Alaskan form of a Siberian species, which resembles the Hudsonian Chickadee, but is paler and has the sides of white instead of gray.

Acadian Chickadee (*Penthestes hudsonicus littoralis.* Fig. 2). This species may be known by its brown crown, brownish back, and rusty sides, which are evident in the field. In the interior of Canada and northwest to Alaska, it is replaced by the closely allied Hudsonian Chickadee (*Penthestes hudsonicus hudsonicus*), a larger, somewhat more brightly colored race.

Chestnut-backed Chickadee (*Penthestes rufescens.* Fig. 7). This distinguishing character of this species is expressed in its common name. As stated by Professor Cooke on the preceding page, four forms of it are known of which the California Chickadee (*Penthestes rufescens neglectus*), has only a tinge of rusty on the flanks, and Barlow's Chickadee (*P. r. barlowi*), has *no* rusty on the flanks.

Bird-Lore's Sixteenth Christmas Census

THE Census for 1915 shows that in the northeastern United States, this winter, there is again a general lack of the irregular winter visitors from the north. Flocks of Redpolls appear in four reports from Connecticut, but one observer in Massachusetts is the only other to report any. There are a few scattered Northern Shrikes, but only one occurrence of Red Crossbills (Olean, N. Y.), and White-winged Crossbills, Pine Grosbeaks and Pine Siskins are entirely absent,—even the Canadians failed to find any White-wings. It is good to find the Black-capped Chickadees, so scarce last winter, even more abundant than ever.

In the competition for first place, Santa Barbara, with 102 species, falls off a little, and even its best record is well beaten by Los Angeles, its first serious competitor, whose superior number of observers are responsible for a list of 121. A promising future competitor is St. Marks, Fla., whose lone worker, unfamiliar with the ground, listed 85, as yet much the largest Christmas Census from east of the Pacific coast.

Forty-odd censuses were received too late for publication, and others were discarded as seeming not at all fairly representative of the Christmas-time bird-life of the regions concerned. It is hard to draw the line, but we feel that our errors are of inclusion rather than of exclusion.—CHARLES H. ROGERS.

Wolfville, N. S.—Dec. 25; 10 A.M. to 12.30 P.M. Cloudless; 3 in. of light snow; no wind; temp. 30°. Herring Gull, 2; Black Duck, 100; Canada Ruffed Grouse, 4; Downy Woodpecker, 1; Northern Raven, 1; Crow, 6; Goldfinch, 11; Vesper Sparrow, 1 (collected for positive identification); Black-capped Chickadee, 7; Acadian Chickadee, 2; Golden-crowned Kinglet, 5. Total, 11 species, 140 individuals. Dec. 20, a flock of 8 to 10 American Crossbills.—R. W. TUFTS.

Yarmouth, N. S.—Dec. 27; one observer, 8.30 A.M. to 12.30 P.M.; other observer, separately, 8 A.M. to 6 P.M. Partly cloudy; ground bare; wind west, strong; temp. 30° at sunrise. Herring Gull, 3; Canada Ruffed Grouse, 2; Downy Woodpecker, 1; Northern Raven, 1; American Crow, 25; Junco, 3; Myrtle Warbler, 7; Brown Creeper, 2; Chickadee, 35; Acadian Chickadee, 32; Golden-crowned Kinglet, 28. Total, 11 species, 139 individuals.—E. CHESLEY ALLEN and HARRISON F. LEWIS.

Arnprior, Ont.—Dec. 26; 9.30 A.M. to 3 P.M. Clear; 16 in. of snow; wind northwest, strong; temp. 12° to 20°. Canada Ruffed Grouse, 1; Hairy Woodpecker, 2; Evening Grosbeak, 31; White-breasted Nuthatch, 2; Red-breasted Nuthatch, 1; Black-capped Chickadee, 20. Total, 6 species, 57 individuals. A Northern Shrike was observed on the 27th. Winter visitors, in general, are very few this winter.—CHARLES MACNAMARA and LIGUORI GORMLEY.

London, Ont. (vicinity of).—Dec. 26; 2.30 to 5 P.M. Overcast; 8 in. of snow; wind west, fresh; temp. about 26°. Downy Woodpecker, 2; American Crow, 10; Snow Bunting, 200; Tree Sparrow, 12; Slate-colored Junco, 2; Cardinal (male) 1; White-breasted Nuthatch, 1; Black-capped Chickadee, 6. Total, 8 species, 234 individuals. A female Cardinal has also been around all winter.—JOHN C. HIGGINS and E. M. S. DALE.

London, Ont. (vicinity of).—Dec. 28; 8 to 11 A.M. Overcast; 8 to 10 in. of snow; very little wind; temp. about 28°. Ruffed Grouse, 1; Screech Owl, 1 (heard at night); Kingfisher, 1; Downy Woodpecker, 3; Blue Jay, 3; American Crow, 2,000 to 3,000;

Purple Finch, 15; Tree Sparrow, 2; Slate-colored Junco, 2; Brown Creeper, 2; White-breasted Nuthatch, 4; Black-capped Chickadee, 25; Golden-crowned Kinglet, 2. Total, 13 species, 61 individuals + Crows.—EDWARD DALY and J. F. CALVERT.

Millbrook, Ont.—Dec. 24; 12 M. to 5 P.M. Cloudy; 8 in. of snow; wind west, light; temp. 32°. Great Blue Heron, 1; Red-tailed Hawk, 1; Downy Woodpecker, 1; Blue Jay, 4; Snow Bunting, 50; Redpoll, 30; Chickadee, 14. Total, 7 species, 101 individuals. —SAM. HUNTER.

Reaboro, Franklin and Bethany, Ont., and return.—Dec. 21; 8.40 A.M. to 5 P.M. Overcast; about 4 in. of snow; wind westerly, light; temp. 28°. Canada Ruffed Grouse, 1; large hawk, 1; Barred Owl, 1; Great Horned Owl, 1; Hairy Woodpecker, 6; Downy Woodpecker, 1; Blue Jay, 15; Pine Grosbeak, 2; Snow Bunting, 400; Tree Sparrow, 11; Song Sparrow, 1; White-breasted Nuthatch, 1; Chickadee, 27. Total, 13 species, 468 individuals.—E. W. CALVERT.

Dover, N. H.—Dec. 26; 10 A.M. to 2 P.M. Cloudy; ground 95 per cent bare; south breeze; temp. 51° to 36°. Herring Gull, 37; American Goldeneye, 13; duck sp., 5; Ruffed Grouse, 3; Sharp-shinned Hawk, 1; Blue Jay, 1; Crow, 5; Meadowlark, 2; Tree Sparrow, 15; Black-capped Chickadee, 19; Golden-crowned Kinglet, 2. Total, 11 species, 103 individuals.—PERLEY M. JENNESS.

East Jaffrey, N. H.—Dec. 23; 7.30 to 11.15 A.M. and 1 to 4.30 P.M. Cloudy, beginning to rain in P.M.; 10 in. of snow; wind southeast, moderate; temp. 21° to 38°. Hairy Woodpecker, 1; Downy Woodpecker, 3; Blue Jay, 3; White-breasted Nuthatch, 1; Black-capped Chickadee, 24; Golden-crowned Kinglet, 2; Robin, 34. Total, 7 species, 68 individuals. The Robins were in a flock that is wintering here.—STUART T. DANFORTH.

Rochester, N. H.—Dec. 29; 1.30 to 4.30 P.M. Heavy snowstorm with strong north wind; 2 to 4 in. of snow; temp. 25°. Ruffed Grouse, 1; Downy Woodpecker, 1; Tree Sparrow, 1; Chickadee, 20; White-breasted Nuthatch, 1; Brown Creeper, heard. Total, 6 species, 26 individuals.—FRANKLIN MCDUFFEE and MRS. GEORGE WATSON.

Tilton, N. H.—Dec. 25; 8.20 A.M. to 12.30 P.M. Cloudy, changing to light rain; a little snow on ground; wind light, southeast; temp. 38°. Blue Jay, 1; White-breasted Nuthatch, 1; Chickadee, 6; Golden-crowned Kinglet, 2. Total, 4 species, 10 individuals. Birds seem unusually scarce this winter.—GEORGE L. PLIMPTON and EDWARD H. PERKINS.

Bennington, Vt.—Dec. 24; 10 to 11.30 A.M. Cloudy, with a fine mist following, making the day dark; 4 to 8 in. of snow; light southeast wind; temp. 40°. Ruffed Grouse, 5; Hairy Woodpecker, 1; Downy Woodpecker, 2; Blue Jay, 2; American Crow, 7; Starling, 2; White-breasted Nuthatch, 1; Red-breasted Nuthatch, 2; Black-capped Chickadee, 10. Total, 9 species, 32 individuals.—DR. and MRS. LUCRETIUS H. ROSS.

Clarendon, Vt.—Dec. 24; 2 to 4.30 P.M. Cloudy; 1 ft. of snow; wind southwest, brisk; temp. 35°. Ruffed Grouse, 3; Great Horned Owl, 2; Downy Woodpecker, 1; Blue Jay, 2; White-breasted Nuthatch, 1; Chickadee, 4. Total, 6 species, 13 individuals. —L. H. POTTER.

Boston, Mass.—Dec. 24; (Arnold Arboretum to Longwood, 9.45 A.M. to 12.45 P.M. and Charles River Basin, 3.45 to 4.15 P.M.); partly cloudy; ground bare; wind northwest, moderate; temp. 39°. Black-backed Gull, 7; Herring Gull, 30; American Goldeneye, 30; Bob-white, 12; Pheasant, 5; Sparrow Hawk, 1; Downy Woodpecker, 1; Flicker, 2; Blue Jay, 10; Crow, 16; Goldfinch, 7; White-throated Sparrow, 1; Junco, 20; Song Sparrow, 2; Cedar Waxwing, 7; Chickadee, 6; Golden-crowned Kinglet, 1. Total, 17 species, 158 individuals.—E. G. and R. E. ROBBINS.

Boston, Mass. (Charles River Basin, the Fens, Riverway, Olmsted Park and Jamaica Pond).—Dec. 20; 9.05 A.M. to 2 P.M. Clear; ground bare; wind northwest, light; temp. 32° to 38°. Black-backed Gull, 7; Herring Gull, 1,500; Merganser, 4;

Mallard, 2; Black Duck, 33; Baldpate, 2 ducks; Wood Duck, 1 drake; Lesser Scaup, 5; Goldeneye, 7; Downy Woodpecker, 2; Flicker, 2; Blue Jay, 13; Crow, 21; Starling, 25; Purple Finch, 1; Goldfinch, 12; White-throated Sparrow, 4; Song Sparrow, 4; Cedar Waxwing, 15; Orange-crowned Warbler, 1; Brown Creeper, 1; Chickadee, 11; Robin, 1. Total, 23 species, 1,674 individuals. Barred Owl, 1, in Public Garden, Dec. 25.—HORACE W. WRIGHT.

Bridgewater, Mass.—Dec. 25; 8 to 10 A.M. Cloudy; ground bare; wind southeast, moderate; temp. 27° to 42°. Red-tailed Hawk, 2; Northern Flicker, 3; Blue Jay, 3; American Crow, 80; Starling, 6; Meadowlark, 2; Goldfinch, 7; Junco, 5; Song Sparrow, 42; Swamp Sparrow, 2; Myrtle Warbler, 50; Brown Creeper, 2; Chickadee, 50; Golden-crowned Kinglet, 2. Total, 14 species, 256 individuals.—HORACE A. MCFARLIN.

Cambridge, Mass. (and vicinity).—Dec. 27; 8.30 A.M. to 1 P.M. and 2.30 to 5.30 P.M. Overcast; ground slightly snow-covered; wind west; temp. 32°. Black-backed Gull, 2; Herring Gull, 261; American Merganser, 11; Mallard, 1; Black Duck, 65; American Goldeneye, 5; Red-shouldered Hawk, 1; Sparrow Hawk, 1; Kingfisher, 1; Hairy Woodpecker, 2; Downy Woodpecker, 2; Flicker, 5; Blue Jay, 1; Crow, 9; Starling, 14; Tree Sparrow, 40; Song Sparrow, 14; Red-breasted Nuthatch, 2; Black-capped Chickadee, 12; Golden-crowned Kinglet, 9; Robin, 5. Total, 20 species, 457 individuals. —GEORGE P. BAKER, JR., LOVELL THOMPSON and CHARLES F. WALCOTT.

Cambridge, Mass. (Fresh Pond, Arlington and Belmont).—Dec. 26; 8 A.M. to 12 M. Overcast; ground bare; wind southwest, very strong; temp. 38°. Black-backed Gull, 4; Herring Gull, 375; American Merganser, 20; Black Duck, 75; American Goldeneye, 1; Ring-necked Pheasant, 1; Sparrow Hawk, 2; Downy Woodpecker, 3; Flicker, 3; Blue Jay, 3; American Crow, 29; Starling, 6; Tree Sparrow, 8; Junco, 5; Song Sparrow, 11; White-breasted Nuthatch, 1; Red-breasted Nuthatch, 1; Black-capped Chickadee, 38; Golden-crowned Kinglet, 25; Robin, 3. Total, 20 species, 614 individuals.—MYLES P. BAKER and HOWARD M. FORBES.

Charles River Village, Mass.—Dec. 27; 9 A.M. to 12.35 P.M. Clear; ground snow-covered; wind westerly, light; temp. 40°. Pheasant, 1; Downy Woodpecker, 1; Blue Jay, 1; Crow, 18; Redpoll, 20; Goldfinch, 16; Tree Sparrow, 1; Junco, 18; Chickadee, 24; Golden-crowned Kinglet, 5. Total, 10 species, 105 individuals.—HENRY M. SPELMAN, JR.

Devereux to Marblehead Neck, Mass.—Dec. 23; 12 to 2.30 P.M. Cloudy; ground bare; wind southeast, moderate; temp. 44°. Horned Grebe, 6; Loon, 1; Herring Gull, 40; Black-backed Gull, 1; Red-breasted Merganser, 4; White-winged Scoter, 2; Old-squaw, 12; Brant, 13; Sparrow Hawk, 1; Downy Woodpecker, 1; Flicker, 3; Crow, 13; Song Sparrow, 1; Myrtle Warbler, 1; Brown Creeper, 1; Chickadee, 2. Total, 16 species, 102 individuals.—ALICE O. JUMP and LIDIAN E. BRIDGE.

Fairhaven, Mass.—Dec. 25; 11 A.M. to 2 P.M. Clear; ground bare; wind south, strong; temp. 43°. Loon, 2; Herring Gull, 7; Ruffed Grouse, 1; Sparrow Hawk, 2; Crow, 9; Blue Jay, 4; Meadowlark, 15; Song Sparrow, 4; Junco, 1; Goldfinch, 3; Purple Finch, 6; Chickadee, 9; Robin, 4. Total, 13 species, 67 individuals.—MABEL L. POTTER.

Ipswich, Mass. (Castle Hill and Beach).—Dec. 26; 10 A.M. to 1.30 P.M. Ground bare; wind southwest, strong, shifting to northwest gale with snow at 1 P.M.; temp. 40°. Horned Grebe, 4; Kittiwake, 2; Black-backed Gull, 25; Herring Gull, 300; Red-breasted Merganser, 175; Old-squaw, 3; American Scoter, 25; White-winged Scoter, 9; Brant, 20; Purple Sandpiper, 1; Ring-necked Pheasant, 4; Northern Flicker, 1; Horned Lark, 7; American Crow, 400; Tree Sparrow, 1; Slate-colored Junco, 24; Myrtle Warbler, 10; White-breasted Nuthatch, 1; Chickadee, 8. Total, 19 species, 920 individuals.—EDMUND and LIDIAN E. BRIDGE.

Leominster, Mass.—Dec. 25; 8 A.M. to 6.30 P.M. Cloudy all day; nearly all bare ground in the open, 6 in. of snow in the woods; no wind; very warm for the season;

temp. 45°. Partridge, 2; Pheasant, 2; Screech Owl, 1; Downy Woodpecker, 2; Blue Jay, 10; Crow, 4; Starling, 175; Tree Sparrow, 20; White-breasted Nuthatch, 2; Red-breasted Nuthatch, 1; Chickadee, 20. Total, 11 species, 239 individuals.—EDWIN RUSSELL DAVIS.

Squantum, Mass.—Dec. 25; 10 A.M. to 12 M. Cloudy; ground bare; wind southeast; temp. 40°. Herring Gull, 250; Red-breasted Merganser, 20; American Goldeneye, 35; Sparrow Hawk, 1; Crow, 3; Meadowlark, 1; Snow Bunting, 17; Song Sparrow, 1. Total, 8 species, 328 individuals.—KEBLE PERINE.

Wareham, Mass.—Dec. 19; sunrise to sunset. Cloudy to clear; wind northwest, light early, becoming fresh; temp. 38°. Horned Grebe, 6; Loon, 2; Black-backed Gull, 1; Herring Gull, 95; Red-breasted Merganser, 18; Hooded Merganser, 7; American Goldeneye, 650; Old-squaw, 17; White-winged Scoter, 14; Pheasant, 2; Mourning Dove, 1; Bald Eagle, 1; Kingfisher, 1; Downy Woodpecker, 1; Flicker, 7; Horned Lark, 35; Blue Jay, 5; Crow, 55; Meadowlark, 24; Goldfinch, 5; Vesper Sparrow, 3; Savannah Sparrow, 2; Tree Sparrow, 40; Field Sparrow, 2; Slate-colored Junco, 25; Song Sparrow, 20; Myrtle Warbler, 32; Pine Warbler, 2; Brown Creeper, 2; Chickadee, 100; Golden-crowned Kinglet, 2; Bluebird, 11. Total, 32 species, 1,188 individuals.—DR. WINSOR M. TYLER, C. A. ROBBINS and FRANK ROBBINS.

Weston, Mass.—Dec. 23; 7 to 8.15 and 9 to 11.30 A.M. and 2 to 3.30 P.M. Hazy in A.M., rain in P.M.; ground bare; wind southeast, moderate; temp. 29° to 46°. Ruffed Grouse, 3; Ring-necked Pheasant, 9; Hairy Woodpecker, 2; Downy Woodpecker, 1; Flicker, 1; Blue Jay, 10; Crow, 25; Goldfinch, 1; Tree Sparrow, 3; Junco, 17; Swamp Sparrow, 2; Cedar Waxwing, 1; Brown Creeper, 1; White-breasted Nuthatch, 3; Golden-crowned Kinglet, 7; Chickadee, 23. Total, 16 species, 109 individuals.—WARREN F. EATON and CHARLES BREWER, JR.

Providence, R. I.—Dec. 25; 9 A.M. to 12.30 P.M. Partially cloudy; ground bare; wind southwest, light; temp. 34°. Sparrow Hawk, 1; Downy Woodpecker, 1; Flicker, 2; Blue Jay, 5; Crow, 3; Purple Finch, 3; Goldfinch, 6; Tree Sparrow, 4; Junco, 18; Song Sparrow, 1; White-breasted Nuthatch, 1. Total, 11 species, 45 individuals.—EDWARD D. KEITH.

Warwick, R. I.—Dec. 25; 9 A.M. to 2.15 P.M. Cloudy; ground bare; wind southwest, light; temp. 38°. Herring Gull, 17; Scaup, 2; Bob-white, 3; Red-shouldered Hawk, 1; Downy Woodpecker, 5; Flicker, 19; Horned Lark, 3; Blue Jay, 20; American Crow, 41; Starling, 206; Purple Finch, 2; Goldfinch, 4; Tree Sparrow, 59; Junco, 92; Song Sparrow, 3; Myrtle Warbler, 59; Winter Wren, 1; White-breasted Nuthatch, 3; Chickadee, 73; Golden-crowned Kinglet, 9; Robin, 1. Total, 21 species, 623 individuals.—HARRY S. HATHAWAY.

Bristol to Plainville, Conn.—Dec. 25; 7.30 A.M. to 12.15 P.M. Partly cloudy; 6 in. of crusted snow (plus drift); calm; temp. 30° at start, about 45° at 12.30 P.M. Downy Woodpecker, 1; Blue Jay, 16+; Crow, 11; Starling, 210+; Goldfinch, 2; Tree Sparrow, 2; White-breasted Nuthatch, 2; Chickadee, 3. Total, 8 species, 247 individuals.—FRANK BRUEN.

Northeast corner of Bristol, to Bristol, Conn. (Edgewood District).—Dec. 25; 7 A.M. to 12.30 P.M. Clear; 6 in. of crusted snow; wind south, very light; temp. 22°, cloudy at 7 A.M., 38° at 12.30 P.M. Hairy Woodpecker, 1; Blue Jay, 15; Crow, 7; Starling, 17; Redpoll, 100+; Goldfinch, 25+; Tree Sparrow, 28; Junco, 14; Song Sparrow, 2; Brown Creeper, 2; White-breasted Nuthatch, 4; Chickadee, 16; Golden-crowned Kinglet, 3. Total, 13 species, 234 individuals.—ELBERT E. SMITH.

Fairfield, Conn. (Birdcraft Sanctuary, 10 acres).—Dec. 25. Herring Gull, 4; Red-tailed Hawk, 2; Sparrow Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 5; Blue Jay, 4; Crow, 8; Starling, flock of 50; Meadowlark, 2; Purple Finch, 10; Goldfinch, 3; White-throated Sparrow, 4; Tree Sparrow, 15; Junco, 30; Song Sparrow, 7; Fox Sparrow,

1; Myrtle Warbler, 12; Brown Creeper, 3; White-breasted Nuthatch, 2; Chickadee, 10; Golden-crowned Kinglet, 5; Robin, 2. Total, 22 species, 181 individuals.—Frank Novak, Warden.

Glastonbury, Conn.—Dec. 25; 10 A.M. to 3 P.M. Clear in A.M., cloudy turning to rain in P.M.; ground partly bare; temp. 36° to 40°. Herring Gull, 6; American Merganser, 29; Gray Partridge, 1; Downy Woodpecker, 1; Flicker, 2; Blue Jay, 3; Crow, 600; Starling, 2; Tree Sparrow, 60; Junco, 20; Brown Creeper, 1; White-breasted Nuthatch, 2; Chickadee, 12; Golden-crowned Kinglet, 2. Total, 14 species, 741 individuals.—Lewis W. Ripley.

Hartford, Conn.—Dec. 25; 9 A.M. to 1 P.M. Partly cloudy; ground snow-covered; wind light; temp. 35°. Sparrow Hawk, 2; Downy Woodpecker, 2; Blue Jay, 10; Crow, 41; Starling, 25; Redpoll, 7; Goldfinch, 20; Tree Sparrow, 35; State-colored Junco, 12; Northern Shrike, 1; White-breasted Nuthatch, 3; Chickadee, 16; Golden-crowned Kinglet, 3. Total, 13 species, 177 individuals.—Clifford M. Case.

West Hartford, Conn.—Dec. 25; 7.50 A.M. to 4.30 P.M. Partly cloudy, to mist and heavy fog; drifted snow, bare ground to 5 ft. deep; temp. 28°. Sharp-shinned Hawk, 1; Red-tailed Hawk, 1; Sparrow Hawk, 2; Long-eared Owl, 1; Screech Owl, 2; Downy Woodpecker, 6; Blue Jay, 16; Crow, 1,250; Starling, 425; Meadowlark, 3; Goldfinch, 1; Tree Sparrow, 6; Song Sparrow, 1; Winter Wren, 1; White-breasted Nuthatch, 5; Chickadee, 6. Total, 16 species, 1,727 individuals.—Edwin H., Myron T., and Paul H. Munger.

Monroe, Conn.—Dec. 27; 8 A.M. to 12 M. Hazy; ground covered, north sides of trees covered, shrubbery and twigs snow-laden; wind west to southwest, mild; temp. 22° to 36°. Ruffed Grouse, 2; Cooper's Hawk, 1 male; Hairy Woodpecker, 2; Downy Woodpecker, 5; Flicker, 1; Blue Jay, 4; Crow, 18; Goldfinch, 11; Tree Sparrow, 1; Junco, 14; Brown Creeper, 1; White-breasted Nuthatch, 9; Chickadee, 15; Golden-crowned Kinglet, 2. Total, 14 species, 86 individuals.—Arthur Jacot.

New Haven, Conn. (Edgewood Park).—Dec. 25; 10 to 11.30 A.M. Heavily cloudy; ground covered with remains of heavy snowfall; wind, none; temp. 36°. Red-shouldered Hawk, 1; Sparrow Hawk, 3; Hairy Woodpecker, 3; Downy Woodpecker, 2; Blue Jay, 6; Crow, 18; Starling, 16; White-throated Sparrow, 2; Tree Sparrow, 80; Field Sparrow, 2; Junco, 2; Song Sparrow, 8; Bluebird, 1. Total, 13 species, 143 individuals.—Clifford H. and Dwight B. Pangburn.

New London, Conn.—Dec. 27; 9.10 A.M. to 4.30 P.M. Clear; snow in patches; wind southwest, light; temp. 31°. Black-backed Gull, 1; Herring Gull, 12; Black Duck, 1; Goldeneye, 75; Bufflehead, 15; Kingfisher, 1; Downy Woodpecker, 1; Flicker, 1; Horned Lark, 20; Crow, 8; Starling, 126; Meadowlark, 12; White-throated Sparrow, 2; Tree Sparrow, 36; Junco, 15; Song Sparrow, 6; Fox Sparrow, 1; Northern Shrike, 1; Myrtle Warbler, 2; White-breasted Nuthatch, 2; Chickadee, 14; Golden-crowned Kinglet, 1; Robin, 3. Total, 24 species, 356 individuals.—Mrs. Frances Miner Graves.

Norwalk, Conn.—Dec. 25; 7.30 to 9.15 A.M. Cloudy; ground partly bare; no wind; temp. 36°. Herring Gull, 40; Mourning Dove, 1; Red-shouldered Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 4; Blue Jay, 6; Crow, 3; Starling, 250; Tree Sparrow, 12; Chipping Sparrow, 1; Junco, 100; Song Sparrow, 10; White-breasted Nuthatch, 4; Chickadee, 4; Robin, 2. Total, 15 species, 439 individuals.—Dec. 28, Purple Grackle, 1.—J. F. Hall.

Windsor, Conn.—Dec. 24; 10 A.M. to 4 P.M. Cloudy until noon; ground mostly snow-covered; wind light; temp. 34° to 40°. American Merganser, 16; Bob-white, 2; Gray Partridge, 5; Red-shouldered Hawk, 1; Sparrow Hawk, 1; Barred Owl, 1; Hairy Woodpecker, 1; Downy Woodpecker, 7; Flicker, 1; Blue Jay, 4; Crow, 22; Starling, 125; Purple Finch, 2; Redpoll, 13; Tree Sparrow, 98; Junco, 16; Song Sparrow, 8; Brown

Creeper, 4; White-breasted Nuthatch, 5; Red-breasted Nuthatch, 3; Chickadee, 16; Robin, 1. Total, 22 species, 352 individuals.—Edward P. St. John.

South Windsor, Conn.—Dec. 24; 8 A.M. to 1 P.M. Partly cloudy; ground partly covered with snow and ice; light wind; temp. 20°. Herring Gull, 10; American Merganser, 25; Bob-white, 10; Ring-necked Pheasant, 1; Sparrow Hawk, 5; Hairy Woodpecker, 4; Downy Woodpecker, 7; Horned Lark, 24; Blue Jay, 12; Crow, 100; Starling, 150; Meadowlark, 20; Purple Finch, 27; Tree Sparrow, 50; Song Sparrow, 14; Brown Creeper, 2; White-breasted Nuthatch, 15; Chickadee, 50. Total, 18 species, 526 individuals.—Five Redpolls seen on Dec. 25.—C. W. Vibert.

Geneva, N. Y., to Naples, Canandaigua and Cayuga Lake Park.—Dec. 26; 8 A.M. to 5.45 P.M. Clear; about 1 in. of snow; wind strong, west; temp. 25° to 35°. Holbœll's Grebe, 1; Horned Grebe, 10; Pied-billed Grebe, 1; Herring Gull, 53; American Merganser, 6; Black Duck, 70; Redhead, 800; Canvasback, 500; Greater Scaup, 950; Lesser Scaup, 7; American Goldeneye, 17; Bufflehead, 7; Old-squaw, 2; Canada Goose, 50; Ruffed Grouse, 2; Ring-necked Pheasant, 17; Sharp-shinned Hawk, 1; Red-tailed Hawk, 1; Red-shouldered Hawk, 1; Screech Owl, 2; Hairy Woodpecker, 3; Downy Woodpecker, 9; Red-bellied Woodpecker, 1; Flicker, 3; Blue Jay, 11; Crow, 1,800; Rusty Blackbird, 2; Goldfinch, 7; Tree Sparrow, 45; Junco, 44; Song Sparrow, 5; Northern Shrike, 2; Winter Wren, 2; Brown Creeper, 1; White-breasted Nuthatch, 18; Chickadee, 98; Golden-crowned Kinglet, 30; Robin, 1. Total, 38 species, 4,574 individuals.—The three observers worked in different directions.—Thomas Sherman, Harley Sherman and Otto McCreary.

Hamburg, N. Y.—Dec. 20; 2 to 5.30 P.M. Cloudy; about 4 in. of snow; wind west, brisk; temp. 24°. Ruffed Grouse, 1; Downy Woodpecker, 3; Crow, 6; Tree Sparrow, 8; Winter Wren, 2; White-breasted Nuthatch, 3; Chickadee, 8. Total, 7 species, 31 individuals.—Red-headed Woodpeckers and Red-breasted Nuthatches absent this winter.—Thomas L. Bourne.

Jamacia, Long Island, N. Y. (northward to Flushing Creek).—Dec. 26; 2.30 to 4.30 P.M. Clear; cold (barely thawing in the sun); several inches of snow; strong northerly winds. During the morning, a snowstorm, driven by a seventy-mile gale, and accompanied by lightning and thunder, had raged. Conditions were unfavorable for seeing many birds. Herring Gull, 1; Marsh Hawk, 2; Broad-winged Hawk (?), 1; Crow, 5; Starling, 12; Tree Sparrow, 12; Junco, 25; Song Sparrow, 2; Swamp Sparrow, 1. Total, 9 species, 61 individuals. I regret that I cannot be absolutely certain about the identity of the Hawk called a Broad-winged.—Robert Cushman Murphy.

New York City (231st Street and Broadway to Jerome Reservoir, Van Cortlandt Park, Mosholu Parkway, Bronx Park, Unionport, Castle Hill and Clason Point. Trolley used between Bronx Park and Unionport, rest of route on foot).—Dec. 27; 8 A.M. to 4.45 P.M. Slightly overcast; ground snow-covered, thawed in some places; wind west, light; temp. 36° to 52°. Loon, 3; Herring Gull, 2,000+; Merganser, 7; Black Duck, 10; Scaup, 200; Black-crowned Night Heron, 42; Bob-white, 16; Red-tailed Hawk, 5; Red-shouldered Hawk, 2; Sparrow Hawk, 1; Kingfisher, 1; Downy Woodpecker, 9; Blue Jay, 6; Crow, 16; Starling, 213; Goldfinch, 32; Vesper Sparrow, 1; White-throated Sparrow, 9; Tree Sparrow, 108; Field Sparrow, 8; Junco, 41; Song Sparrow, 20; Cedar Waxwing, 2; Brown Creeper, 5; White-breasted Nuthatch, 1; Chickadee, 21; Robin, 1. Total, 27 species, 2,800+ individuals. On Dec. 25, two Fox Sparrows and a female Cardinal were seen in Bronx Park by the Messrs. Nichols.—George E. Hix, L. Nelson Nichols and Edward G. Nichols.

New York City (Central Park).—Dec. 25; 9 A.M. to 1 P.M. Cloudy; ground mostly bare, with some remaining patches of snow; wind southeast, light; temp. 45° to 54°. Herring Gull, 70; Black Duck, 1; Downy Woodpecker, 2; Starling, 24; Junco, 4; Song

Sparrow, 2; Cardinal, 2; Chickadee, 5. Total, 8 species, 110 individuals.—Mr. and Mrs. G. Clyde Fisher.

New York City (Prospect Park, Brooklyn).—Dec. 30; 2.15 to 4.15 P.M. Clear; ground bare, trees covered with ice; wind west, light; temp. 35°. Herring Gull, 41; Screech Owl, 1; Downy Woodpecker, 2; Starling, 300; Goldfinch, 18; White-throated Sparrow, 7; Tree Sparrow, 2; Junco, 75; Song Sparrow, 2; Fox Sparrow, 3; Brown Creeper, 1; White-breasted Nuthatch, 1; Black-capped Chickadee, 5; Robin, 1. Total, 14 species, 459 individuals.—Kate P. and E. W. Vietor.

Olean, N. Y. (City and Maplewood).—Dec. 25; 7.30 A.M. to 4.30 P.M. Light rain; foot of snow; south wind; temp. 34° to 40°. Partridge, 11; Pheasant, 10; Great Horned Owl, 3; Hairy Woodpecker, 5; Downy Woodpecker, 6; Pileated Woodpecker, 1; Blue Jay, 6; American Crossbill, 5; Tree Sparrow, 5; Junco, 2; Northern Shrike, 1; White-breasted Nuthatch, 7; Chickadee, 13. Total, 12 species, 74 individuals.—Mrs. J. J. Nenno and Mrs. I. P. Hewitt.

Orient, L. I., N. Y.—Dec. 26; all day. Cloudy at start with frequent dashes of rain (heavy rain all preceding night); ground bare at start, later a trace of snow, free from frost; ponds and water-ways open; wind at start a sixty-mile gale from south, shifting to west at 10 A.M. and reaching a velocity of eighty miles an hour, uprooting trees and overturning buildings, with a blinding snow-squall lasting an hour. P.M. clear with high northwest wind; temp. 40° at start, 33° at return. Horned Grebe, 15; Loon, 3; Black-backed Gull, 6; Herring Gull, 600; Bonaparte's Gull, 1; Merganser, 1; Red-breasted Merganser, 20; Black Duck, 150; Greater Scaup, 200; Goldeneye, 10; Bufflehead, 150; Old-squaw, 200; Scoter, 2; Surf Scoter, 30; White-winged Scoter, 75; Canada Goose, 16; Woodcock, 1; Bob-white, 1; Pheasant, 6; Marsh Hawk, 1; Sharp-shinned Hawk, 1; Red-shouldered Hawk, 1; Sparrow Hawk, 1; Screech Owl, 2; Kingfisher, 1; Downy Woodpecker, 3; Flicker, 4; Horned Lark, 300; Blue Jay, 1; Crow, 125; Fish Crow, 4 (probably others, notes not heard); Starling, 2,000; Cowbird, 11 (10 in one flock); Meadowlark, 90; Rusty Blackbird, 1; Purple Grackle, 6; Goldfinch, 2; Snow Bunting, 75; Ipswich Sparrow, 3; Savannah Sparrow, 1; White-throated Sparrow, 2; Tree Sparrow, 8; Junco, 3; Song Sparrow, 40; Swamp Sparrow, 2; Fox Sparrow, 1; Myrtle Warbler, 100; Catbird, 1; Carolina Wren, 1; Winter Wren, 1; Chickadee, 12; Golden-crowned Kinglet, 8; Robin, 2. Total, 53 species, 4,300 individuals. The hurricane made it impossible to record, with exception of Black Duck, the large numbers of water-fowl that have been present recently.—Roy Latham.

Port Chester, N. Y.—Dec. 23; 8 A.M. to 5 P.M. Partly cloudy; 3 in. of snow; wind east, light; temp. 30°. Herring Gull, 250; Red-breasted Merganser, 20; Black Duck, 5; American Goldeneye, 2; Old-squaw, 20; White-winged Scoter, 200; Bob-white, 12; Red-shouldered Hawk, 2; Sparrow Hawk, 2; Long-eared Owl, 1; Downy Woodpecker, 17; Flicker, 1; Blue Jay, 6; Crow, 70; Starling, 40; Meadowlark, 3; Purple Finch, 2; Goldfinch, 7; White-throated Sparrow, 2; Tree Sparrow, 100; Junco, 125; Song Sparrow, 5; Winter Wren, 3; Brown Creeper, 7; White-breasted Nuthatch, 12; Chickadee, 60; Golden-crowned Kinglet, 15; Robin, 4. Total, 28 species, 993 individuals.—Richard L. Burdsall, E. Morris Burdsall, Samuel N. Comly, Paul C. Sfofford and James C. Maples.

Poughkeepsie, N. Y.—Dec. 25; 2 to 4 P.M. Clear; 1 ft of snow; wind northwest, light; temp. 32°. Belted Kingfisher, 1; Downy Woodpecker, 1; Blue Jay, 1; Crow, 200; Starling, 40; Goldfinch, 1; Junco, 3; Black-capped Chickadee, 5; Golden-crowned Kinglet, 1. Total, 9 species, 253 individuals.—F. A. and A. E. Saunders.

Rhineback, N. Y.—Dec. 25; 8 A.M. to 1 P.M. Cloudy; deep snow; wind south, light; temp. 40°. American Merganser, 2; Ring-necked Pheasant, 30; Gray Partridge, 5; Marsh (?) Hawk, 1; Barred Owl, 1; Hairy Woodpecker, 4; Downy Woodpecker, 8 (drums and utters long call); Yellow-bellied Sapsucker, 1 male; Blue Jay, 10; Crow, 15; Purple

Finch, 15; Goldfinch, 6; Junco, 12; Song Sparrow, 1; Tree Sparrow, 13; Brown Creeper, 2; White-breasted Nuthatch, 20; Chickadee, 25 (whistles).—Total, 18 species, 171 individuals.—Mrs. J. F. Goodell, Tracy Dows and Maunsell S. Crosby.

Rochester, N. Y. (**Highland Park, Durand-Eastman Park and vicinities**).—Dec. 21; 7.30 A.M. to 4.30 P.M. Fair to slightly cloudy; 1 in. of snow; wind southeast, light; temp. 24°. Horned Grebe, 1; Herring Gull, 300; Pheasant, 9; Red-tailed Hawk, 1; Downy Woodpecker, 7; Crow, 10; Tree Sparrow, 30; Slate-colored Junco, 12; Northern Shrike, 1; White-breasted Nuthatch, 7; Black-capped Chickadee, 25; Robin, 1. Total, 12 species, 404 individuals.—Wm. L. G. Edson and R. E. Horsey.

Rochester, N. Y. (**Bushnell Basin**).—Dec. 26; 11 A.M. to 3.30 P.M. Clear to cloudy; 2 in. of snow; wind northwest, brisk; temp. 28°. Ruffed Grouse, 1; Mongolian Pheasant, 3; Mourning Dove, 2; Great Horned Owl, 1; Hairy Woodpecker, 1; Downy Woodpecker, 5; Crow, 15; Tree Sparrow, 18; Song Sparrow, 4; White-breasted Nuthatch, 10; Chickadee, 30; Golden-crowned Kinglet, 3. Total, 12 species, 93 individuals.—Harry E. Gordon and Oscar F. Schaefer.

Rochester, N. Y. (**Maplewood Park and Riverside**).—Dec. 25; 7.30 to 8.30 A.M. and 10 A.M. to 12 M. Cloudy, with rain; ground bare; wind southwest, light; temp. 42°. Herring Gull, 50; Hairy Woodpecker, 1; Downy Woodpecker, 2; Crow, 13; Junco, 25; Tree Sparrow, 15; White-breasted Nuthatch, 1; Chickadee, 5. Total, 8 species, 112 individuals.—Nettie Sellinger Pierce.

Syracuse, N. Y. (**Liverpool to Long Branch**).—Dec. 26; 10.50 A.M. to 1.30 P.M. Lake open; clear; 2 in. of snow; wind northwest, very high; temp. 29°. Herring Gull, about 150; Crow, 9; Brown Creeper, 2; White-breasted Nuthatch, 3; Chickadee, 1. Total, 5 species, 165 individuals.—Nettie M. Sadler.

Trumansburg, N. Y.—Dec. 25; 8 A.M. to 2 P.M. Cloudy, rain, some snow; wind south; temp. 43°. Hairy Woodpecker, 1; Downy Woodpecker, 2; Yellow-bellied Sapsucker, 1; Crow, 54; Brown Creeper, 1; White-breasted Nuthatch, 4; Chickadee, 14; Golden-crowned Kinglet, 2. Total, 8 species, 79 individuals.—Philip R. and Keith Sears.

Woodmere, N. Y.—Dec. 28; 9.35 A.M. to 1.10 P.M. Cloudy, with occasional showers; ground bare in spots, but mostly covered with ½ to 6 in. of snow, rapidly melting; wind light, west, becoming northwest; temp. 43°. Herring Gull, 10; Red-shouldered Hawk, 1; Sparrow Hawk, 1; Downy Woodpecker, 6; Flicker, 1; Crow, 37; Fish Crow, 2; Starling, 49; Meadowlark, 10; Goldfinch, 7; White-throated Sparrow, 4; Tree Sparrow, 51; Slate-colored Junco, 2; Song Sparrow, 13; Fox Sparrow, 5; Winter Wren, 3; Brown Creeper, 2; White-breasted Nuthatch, 1; Black-capped Chickadee, 9; Golden-crowned Kinglet, 3. Total, 20 species, 217 individuals.—Charles A. Hewlett.

Bernardsville, N. J.—Dec. 23; 9 to 11 A.M. and 2 to 5 P.M. Partly cloudy; about 8 in. of snow; wind southeast, light; temp. 33°. Ruffed Grouse, 2; Common Pheasant, 1 male; Sparrow Hawk, 1; Downy Woodpecker, 5; Crow, 20; Starling, 90; Goldfinch, 2; White-throated Sparrow, 1 male; Tree Sparrow, 17; Junco, 40; Song Sparrow, 4; Cardinal, 2 males, 1 female; Chickadee, 1; Golden-crowned Kinglet, 1. Total, 14 species, 186 individuals.—J. Dryden Kuser.

Camden, N. J. (**and vicinity**).—Dec. 25; 7 to 9.15 A.M. and 10.15 A.M. to 4 P.M. Cloudy; ground bare; wind south; temp. 57°. Herring Gull, 8; Merganser, 1; Black-crowned Night Heron, 3; Bob-white, 14; Marsh Hawk, 1; Cooper's Hawk, 1; Red-tailed Hawk, 6; Sparrow Hawk, 4; Barn Owl, 2; Short-eared Owl, 2; Hairy Woodpecker, 1; Downy Woodpecker, 4; Flicker, 3; Crow, 150; Starling, 200; Red-winged Blackbird, 1; Meadowlark, 2; Purple Finch, 1; White-throated Sparrow, 15; Tree Sparrow, 4; Field Sparrow, 8; Slate-colored Junco, 40; Song Sparrow, 18; Swamp Sparrow, 2; Cardinal, 8; Winter Wren, 2; White-breasted Nuthatch, 1; Red-breasted Nuthatch, 1; Chickadee, 1; Golden-crowned Kinglet, 8. Total, 30 species, 512 individuals.—Julian K. Potter.

Englewood, N. J.—Dec. 25; 8.45 A.M. to 5 P.M. Mostly cloudy; ground mostly snow-covered; wind easterly, light; temp. 51° at 1 P.M. Herring Gull, 230; Marsh Hawk, 1; Red-tailed Hawk, 1; Sparrow Hawk, 1; Hairy Woodpecker, 2; Downy Woodpecker, 7; Flicker, 2; Blue Jay, 4; American Crow, 12; Starling, 51; White-throated Sparrow, 10; Tree Sparrow, 26; Junco, 82; Song Sparrow, 29; Myrtle Warbler, 1; Winter Wren, 3; Brown Creeper, 5; White-breasted Nuthatch, 4; Tufted Titmouse, 2; Black-capped Chickadee, 9; Hermit Thrush, 1. Total, 21 species, about 585 individuals.—CHARLES H. ROGERS.

Hackettstown, N. J.—Dec. 22; 8.30 to 10.45 A.M. and 2.15 to 4.50 P.M. Fair; remains of 16 in. snow, ground partly bare, partly with deep drifts; temp. 20°. Pheasant, 2; Sparrow Hawk, 1; Downy Woodpecker, 4; Blue Jay, 1; Crow, 4; Starling, 11; Meadowlark, 13; Goldfinch, 1; Tree Sparrow, 6; Junco, 14; Song Sparrow, 3; Brown Creeper, 2; White-breasted Nuthatch, 2; Chickadee, 11; Golden-crowned Kinglet, 1; Robin, 1; Bluebird, 2. Total, 17 species, 79 individuals.—MARY PIERSON ALLEN.

Moorestown, N. J.—Dec. 27; 6 A.M. to 1.20 P.M. and 2.10 to 6 P.M. At start clear; wind southwest, light; 1 in. of snow; temp. at start, 23°. American Merganser, 5; Great Blue Heron, 1; Killdeer, 1; Sharp-shinned Hawk, 1; Red-tailed Hawk, 1; Red-shouldered Hawk, 1; Sparrow Hawk, 6; Long-eared Owl, 5; Screech Owl, 1; Hairy Woodpecker, 2; Downy Woodpecker, 14; Flicker, 4; Blue Jay, 4; Crow, 40; Starling, 48; Meadowlark, 5; Purple Finch, 4; Goldfinch, 3; White-throated Sparrow, 42; Tree Sparrow, 85; Field Sparrow, 2; Junco, 106; Song Sparrow, 101; Swamp Sparrow, 3; Cardinal, 11; Carolina Wren, 4; Winter Wren, 12; Brown Creeper, 1; White-breasted Nuthatch, 6; Tufted Titmouse, 6; Chickadee, 2; Golden-crowned Kinglet, 10; Robin, 2; Bluebird, 1. Total, 34 species, 540 individuals.—WILLIAM B. EVANS and GEORGE H. HALLETT, JR.

Morristown, N. J.—Dec. 25; 8.45 A.M. to 12.15 P.M. Cloudy; 8 in. of old snow; wind southwest, light; temp. 32° to 47°. Red-shouldered Hawk, 1; Kingfisher, 1; Hairy Woodpecker, 1; Downy Woodpecker, 8; Blue Jay, 24; Crow, 42; Starling, 36; Purple Finch (singing), 11; Tree Sparrow, 16; Junco, 38; Song Sparrow, 11; Winter Wren, 3; White-breasted Nuthatch, 15; Tufted Titmouse, 1; Chickadee, 44; Golden-crowned Kinglet, 3. Total, 16 species, 255 individuals.—R. C. CASKEY.

Mt. Holly, Burlington Co., N. J.—Dec. 19; 9 A.M. to 1 P.M. and 3 to 5 P.M. Clear; ground partly snow-covered; wind northwest; temp. 42°. Hairy Woodpecker, 2; Downy Woodpecker, 4; (Prairie?) Horned Lark, 15; Blue Jay, 5; American Crow, 400; Fish Crow, 1; Starling, 15; Goldfinch, 19; White-throated Sparrow, 12; Tree Sparrow, 15; Junco, 150; Song Sparrow, 16; Cardinal, 3; Winter Wren, 1; Brown Creeper, 6; White-breasted Nuthatch, 4; Red-breasted Nuthatch, 6; Tufted Titmouse, 4; Black-capped Chickadee, 26; Golden-crowned Kinglet, 4; Hermit Thrush, 1; Bluebird, 2. Total, 22 species, 711 individuals.—MR. and MRS. NELSON D. W. PUMYEA.

Newfield, N. J.—Dec. 25; 10 A.M. to 4 P.M. Cloudy; ground bare; wind south, brisk; temp. 52°. Bob-white, 7; Downy Woodpecker, 1; Crow, 3; Goldfinch, 1; Tree Sparrow, 7; Song Sparrow, 3; Junco, about 200; Chickadee, 5; Golden-crowned Kinglet, 1. Total, 9 species, about 228 individuals.—WM. W. FAIR.

Pequannock and Pompton Plains, N. J.—Dec. 25; 9 A.M. to 12 M. Fair with light clouds; 8 in. of snow; wind northwest, light; temp. 34°. Marsh Hawk, 3; Red-shouldered Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 5; Blue Jay, 9; Crow, 26; Starling, 35; Meadowlark, 3; Purple Finch, 1; White-throated Sparrow, 5; Tree Sparrow, 20; Junco, 26; Song Sparrow, 28; Swamp Sparrow, 5; Brown Creeper, 2; White-breasted Nuthatch, 4; Tufted Titmouse, 3; Chickadee, 4. Total, 18 species, 181 individuals.—LOUIS S. KOHLER.

Plainfield, N. J. (to Ash Swamp).—Dec. 25; 6.45 A.M. to 6.05 P.M. Partly cloudy; ground mostly snow-covered in woods and bare in open; temp. 34°. Cooper's (?) Hawk, 1; Red-tailed Hawk, 3; Red-shouldered Hawk, 1; Sparrow Hawk, 1; Barred Owl, 1;

Saw-whet Owl, 1; Screech Owl, 1; Hairy Woodpecker, 3; Downy Woodpecker, 9; Flicker, 4; Blue Jay, 6; American Crow, 75; Fish Crow, 1; Starling, 150; Meadowlark, 25; Rusty Blackbird, 3 (flock); Grackle (?), 1; Purple Finch, 16; Goldfinch, 13; White-throated Sparrow, 10; Tree Sparrow, 170; Field Sparrow, 8; Junco, 70; Song Sparrow, 30; Swamp Sparrow, 3; Cardinal, 5; Winter Wren, 4; Brown Creeper, 6; White-breasted Nuthatch, 4; Tufted Titmouse, 10; Black-capped Chickadee, 10; Golden-crowned Kinglet, 6; Bluebird, 1. Total (positively identified), 31 species, 665 individuals.—W. DEW. MILLER.

Beaver, Pa. (Beaver's Hollow, Dutch Ridge Road and Gypsy Glen. Distance, 13 miles).—Dec. 27; 10.15 A.M. to 1.25 P.M. Two inches of snow; wind west, light, then southwest by south, moderately strong, then south, light; temp. 29° at start, 31° at finish. Hairy Woodpecker, 1; Downy Woodpecker, 6; Tree Sparrow, 46; Slate-colored Junco, 134; Song Sparrow, 50; Brown Creeper, 1; White-breasted Nuthatch, 3; Black-capped Chickadee, 12. Total, 9 species, 253 individuals.—W. R. BOULTON, JR.

Doylestown, Pa.—Dec. 25; 10 A.M. to 2.30 P.M. Fair; ground snow-covered; wind southwest; temp. 40°. Red-shouldered Hawk, 1; Sparrow Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 3; Blue Jay, 5; Crow, 7; Starling, 10; Meadowlark, 3; Purple Finch, 3; Tree Sparrow, 8; Junco, 42; Song Sparrow, 4; Cardinal, 2; White-breasted Nuthatch, 3; Tufted Titmouse, 5; Black-capped Chickadee, 16; Robin, 1; Bluebird, 2. Total, 18 species, 117 individuals.—DOYLESTOWN NATURE CLUB, per MISS ELIZABETH COX.

Fort Washington and Whitemarsh, Pa.—Dec. 26; 1.30 to 4 P.M. Clear; ground snow-covered; wind northwest, strong; temp. 38°. Red-shouldered Hawk, 1; Sparrow Hawk, 1; Downy Woodpecker, 1; Flicker, 1; Crow, 13; Starling, 6; Purple Finch, 10; Tree Sparrow, 4; Junco, 25; Song Sparrow, 2; Cardinal, 1; White-breasted Nuthatch, 2. Two unidentified hawks. Total, 12 species, 67 individuals.—GEORGE LEAR.

Lititz, Pa. (Valley of the Hammer Creek, northern Lancaster Co.).—Dec. 26; 8.30 A.M. to 5 P.M. Clear; ground covered with drifting snow; northwest gale; temp. 27°. Bob-white, 6; Ruffed Grouse, 2; Mourning Dove, 1; Turkey Vulture, 35; Marsh Hawk, 1 (my first winter record for Lancaster Co.); Red-tailed Hawk, 1; Red-shouldered Hawk, 1; Sparrow Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 2; Flicker, 1; Blue Jay, 2; Crow, 1,200; Starling, 9; Meadowlark, 5; Purple Grackle, 1; Tree Sparrow, 38; Junco, 52; Song Sparrow, 16; Cardinal, 1; Northern(?) Shrike, 1; Winter Wren, 1; White-breasted Nuthatch, 2; Black-capped Chickadee, 2; Bluebird, 6. Total, 25 species, 1,388 individuals.—HERBERT H. BECK and ABRAHAM BECK MILLER.

Malvern, Pa. (across Chester Valley, along north hill, back across valley).—Dec. 27; 9 A.M. to 5 P.M. Clear; about 2 in. of snow; wind west and southwest, light; temp. 25°. Cooper's Hawk, 1; Downy Woodpecker, 2; Flicker, 1; American Crow, 563; Starling, 6; Purple Grackle, 1; Tree Sparrow, 52; Junco, 158; Song Sparrow, 11; Cardinal, 2; Winter Wren, 1; Chickadee, 6; Bluebird, 2. Total, 13 species, 806 individuals.—LAWRENCE S. GROSS.

McKeesport, Pa.—Dec. 26; 8.45 A.M. to 5.15 P.M. Partly cloudy; light fall of snow; wind northwest to southwest, moderate; temp. 25° to 32°. Distance, 20 miles. Ruffed Grouse, 2; Hairy Woodpecker, 1; Downy Woodpecker, 3; Flicker, 2; Goldfinch, 13; Tree Sparrow, 20; Junco, 29; Song Sparrow, 9; Fox Sparrow, 1 (my first so late in December; carefully identified at 20 ft.); Cardinal, 10; Carolina Wren, 1; Brown Creeper, 1; White-breasted Nuthatch, 2; Tufted Titmouse, 5; Chickadee, 27; Bluebird (in flock), 8. Total, 16 species, 134 individuals.—THOS. L. MCCONNELL.

Philadelphia, Pa. (Wynnefield to vicinity of Woodside Park and Chamounix).—Dec. 27; 1 to 4 P.M. Partly cloudy; 1 in. of snow; wind southwest, light; temp. 42°. Herring Gull, 1; Goldeneye(?) Duck, 1; Sparrow Hawk, 1; Downy Woodpecker, 2; Crow, 12; Starling, 4; White-throated Sparrow, 17; Tree Sparrow, 10; Junco, 18; Song

Sparrow, 10; Cardinal, 8. Total, 10 species, 83 individuals. Birds very scarce, yet more ground covered than last year. —J. Wilson Corriston.

Pittsburgh, Pa. (across the country to Harmarville, Pa.).—Dec. 25; 9.30 A.M. to 3.30 P.M. Gloomy and dark, with an almost steady drizzle of rain; ground bare; strong wind; temp. at start 55°, on return 36°; 15 miles. Hairy Woodpecker, 2; Downy Woodpecker, 5; Crow, 5; Tree Sparrow, 45; Junco, 22; Song Sparrow, 20; Cardinal, 23; Winter Wren, 2; Brown Creeper, 2; White-breasted Nuthatch, 4; Tufted Titmouse, 12; Chickadee, 20; Robin, 1; Bluebird, 4. Total, 14 species, 147 individuals. On the 20th, a Ring-necked Pheasant was seen, our first record for its occurrence here.—Thos. D. Burleigh and Albert D. McGrew.

Reading, Pa. (along Antietam Creek).—8 A.M. to 4 P.M. Cloudy; ground bare; wind southeast; temp. 40° to 50°. Kingfisher, 1; Downy Woodpecker, 2; American Crow, 30; Meadowlark, 2; Goldfinch, 10; Tree Sparrow, 60; Junco, 75; Song Sparrow, 6; Cardinal, 1; Winter Wren, 1; White-breasted Nuthatch, 3; Black-capped Chickadee, 13; Golden-crowned Kinglet, 3; Bluebird, 4. Total, 14 species, 211 individuals.—Mr. and Mrs. G. Henry Mengel.

Sewickley, Pa.—Dec. 25; 10 A.M. to 12.30 P.M. Wind southeast, light, veering to southwest and increasing, with rain (becoming snow at night); temp. falling, 52° to 49°. Ruffed Grouse, 1; Red-shouldered Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 8; Blue Jay, 1; Crow, 2; Goldfinch, 1; Slate-colored Junco, 100; Song Sparrow, 7; Cardinal, 6; Carolina Wren, 1; White-breasted Nuthatch, 9; Tufted Titmouse, 15; Chickadee, 7; Golden-crowned Kinglet, 4. Total, 15 species, 164 individuals.—H. Clive Morrison, Francis A. Hegner and Bayard H. Christy.

Springs, Pa.—Dec. 24; 9 A.M. to 3 P.M. Hazy; sunshine at times; 3 in. of snow; wind west, light; temp. 32° to 42°. Ruffed Grouse, 1; Great Horned Owl, 1 (7 P.M.); Hairy Woodpecker, 2; Downy Woodpecker, 4; Blue Jay, 1; White-throated Sparrow, 1; Tree Sparrow, 2; Junco, 11; Cardinal, 2; Winter Wren, 1; Brown Creeper, 1; White-breasted Nuthatch, 4; Chickadee, 7; Golden-crowned Kinglet, 3; Robin, 1. Total, 15 species, 42 individuals.—Ansel B. Miller.

West Chester, Pa.—Dec. 25; 9 A.M. to 12 M. Partly cloudy; ground mostly bare, ponds frozen; wind south, strong; temp. 42° to 48°. Turkey Vulture, 1; Marsh Hawk, 1; Screech Owl, 1; Hairy Woodpecker, 2; Downy Woodpecker, 10; Crow, 100; Starling, 5; Meadowlark, 2; Purple Grackle, 1; Purple Finch, 2; Junco, 500; Song Sparrow, 10; Cardinal, 2; Winter Wren, 2; Brown Creeper, 5; White-breasted Nuthatch, 3; Chickadee, 5; Bluebird, 2. Total, 18 species, 654 individuals.—Robt. P. Sharples and Thomas H. Jackson.

West Chester, Pa.—Dec. 25; 9.30 A.M. to 12.30 P.M. Ground bare, except some remnants of drifts in places; wind south, brisk; temp. 44°. Turkey Vulture, 3; Red-tailed Hawk, 3; Rough-legged Hawk, 1; Downy Woodpecker, 11; Crow, 147; Starling, 3; Purple Grackle, 304; Meadowlark, 3; Goldfinch, 5; White-throated Sparrow, 5; Tree Sparrow, 33; Junco, 62; Song Sparrow, 36; Cardinal, 5; Winter Wren, 2; Brown Creeper, 1; White-breasted Nuthatch, 6. Total, 17 species, 630 individuals.—C. E. Ehinger.

Williamsport, Pa.—Dec. 27; 9 A.M. to 3 P.M. Overcast; 1 in. of snow; no wind; temp. 25°. Walked six miles, the two of us covering the same ground. Bob-white, 1; large hawk sp., 1; Downy Woodpecker, 12; Crow, 26; Goldfinch, 1; Tree Sparrow, 16; Slate-colored Junco, 8; Song Sparrow, 3; Myrtle Warbler, 1 (our first at this season; got two good observations on it); Winter Wren, 1; Brown Creeper, 2; White-breasted Nuthatch, 15; Tufted Titmouse, 18; Black-capped Chickadee, 46. Total, 14 species, 151 individuals.—John P. Young and Charles V. P. Young.

Baltimore, Md. (Valley of Gwynn's Falls, and Winsdor Hills).—Dec. 26; 7.45 A.M. to 12.45 P.M. Strong northwest wind; ½-in. of new snow on ground; temp. 33°.

Turkey Vulture, 1; Sparrow (?) Hawk, 1; Downy Woodpecker, 1; American Crow, 26; Goldfinch, 7; White-throated Sparrow, 24; Tree Sparrow, 3; Junco, 74; Song Sparrow, 6; Cardinal, 12; Carolina Wren, 2; White-breasted Nuthatch, 5; Tufted Titmouse, 14; Chickadee, 23; Golden-crowned Kinglet, 1. Total, 15 species, 200 individuals.—SIDNEY HOLLANDER and JOSEPH N. ULMAN.

Cambridge, Dorchester County, Md.—Dec. 24; 8.15 to 10.45 A.M. Clear at start, becoming slightly overcast; heavy frost; no wind at start, light northwest at finish; temp. 28° at start, 44° at finish. Herring Gull, 3; Killdeer, 1; Turkey Vulture, 21; Marsh Hawk, 1; Red-shouldered Hawk, 1; Sparrow Hawk, 1; Downy Woodpecker, 3; Flicker, 1; Blue Jay, 3; Crow, 18; Meadowlark, 6; Goldfinch, 13; Field Sparrow, 37; Slate-colored Junco, 170; Song Sparrow, 3; Cardinal, 7; Myrtle Warbler, 1; Carolina Wren, 2; Brown Creeper, 1; Tufted Titmouse, 4; Carolina Chickadee, 12; Golden-crowned Kinglet, 6; Bluebird, 9. Total, 23 species, 324 individuals.—RALPH W. JACKSON.

Washington, D. C. (Aqueduct Bridge, Georgetown, D. C., to Wellington, Fairfax Co., Va.).—Dec. 27; 8 A.M. to 5.20 P.M. Fair in forenoon, slightly cloudy in afternoon; wind southerly, light; a little snow remaining on northern slopes; temp. 29° to 52°. Herring Gull, 45; Great Blue Heron, 1; Killdeer, 4; Bob-white, 8; Turkey Vulture, 8; Red-tailed Hawk, 1; Red-shouldered Hawk, 2; Sparrow Hawk, 3; Barred Owl, 3; Kingfisher, 3; Hairy Woodpecker, 2; Downy Woodpecker, 13; Flicker, 7; Blue Jay, 10; Crow, 103; Fish Crow, 20; Meadowlark, 61; Goldfinch, 29; White-throated Sparrow, 38; Tree Sparrow, 27; Field Sparrow, 32; Junco, 194; Song Sparrow, 40; Swamp Sparrow, 5; Fox Sparrow, 1; Towhee, 1; Cardinal, 8; Migrant Shrike, 2; Myrtle Warbler, 11; Mockingbird, 4; Carolina Wren, 10; Winter Wren, 2; Brown Creeper, 2; White-breasted Nuthatch, 8; Tufted Titmouse, 26; Carolina Chickadee, 10; Golden-crowned Kinglet, 5; Hermit Thrush, 1; Bluebird, 11. Total, 39 species, 761 individuals.—W. L. MCATEE, ALEX. WETMORE and E. A. PREBLE.

Arlington and Dyke, Va.—Dec. 22; 9.45 A.M. to 1 P.M. and 4 to 5 P.M. Clear; strong wind; temp. 35°. Herring Gull, 38; Lesser Scaup, 25; Ruddy Duck, 27; Night Heron, 1; Killdeer, 24; Turkey Vulture, 6; Red-shouldered Hawk, 1; Broad-winged Hawk, 1; Barred Owl, 1; Kingfisher, 1; Hairy Woodpecker, 1; Downy Woodpecker, 9; Flicker, 1; Horned Lark, 50; Blue Jay, 1; American Crow, 12; Fish Crow, 300; Red-winged Blackbird, 1; Meadowlark, 10; Rusty Blackbird, 6; Purple Grackle, 12; Purple Finch, 2; Goldfinch, 24; White-throated Sparrow, 180; Tree Sparrow, 4; Field Sparrow, 6; Junco, 275; Song Sparrow, 13; Cardinal, 16; Myrtle Warbler, 13; Mockingbird, 1; Carolina Wren, 4; Winter Wren, 1; Brown Creeper, 5; White-breasted Nuthatch, 7; Tufted Titmouse, 11; Carolina Chickadee, 10; Golden-crowned Kinglet, 5; Ruby-crowned Kinglet, 2; Hermit Thrush, 1; Robin, 1; Bluebird, 15. Total, 42 species, 1,124 individuals.—MR. and MRS. LEO. D. MINER and RAYMOND W. MOORE.

Culpeper, Va. (Driving through the country west to foot hills of Blue Ridge Mountains).—Dec. 27; all day. Clear and balmy; wind northwest, very light; temp. about 36° to 40°; ground bare. Turkey Vulture, 122; Red-tailed Hawk, 1; Sparrow Hawk, 2; Kingfisher 1; Crow, 5206; Blue Jay, 2; Meadowlark, 28; Northern (?) Shrike, 1; Song Sparrow, 30; Junco, 460; Bluebird, 33. Total, 11 species, 5,886 individuals.—S. EARL RIDDLE.

Charleston, W. Va.—Dec. 26; 8 A. M. to 1 P.M. and 4 to 5.30 P.M. Fair; 4 in. of snow; no wind; temp. 27° to 33°. Screech Owl, 1; Downy Woodpecker, 2; Flicker, 5; Crow, 4; Goldfinch, 1; Slate-colored Junco, 23; Song Sparrow, 4; Towhee, 8; Cardinal, 3; Carolina Wren, 5; Winter Wren, 1; Tufted Titmouse, 2; Carolina Chickadee, 2; Bluebird, 4. Total, 14 species, 65 individuals.—LOUISA T. and TRUTH N. TREELY.

Charleston, Kanawha Co., W. Va.—Dec. 26; 11 A.M. to 2.30 P.M. Cloudy; 2 to 4 in. of fresh snow; wind west; temp. 32°. Hills and ravines south of the city; walked 5 miles. Bob-white, 16; Screech Owl, 1; Hairy Woodpecker, 3; Red-headed Woodpecker,

1; Flicker, 8; Blue Jay, 1; Crow, 3; Goldfinch, 11; Field Sparrow, 19; Slate-colored Junco, 138; Song Sparrow, 15; Towhee, 10; Cardinal, 12; Carolina Wren, 6; White-breasted Nuthatch, 3; Red-breasted Nuthatch, 2; Tufted Titmouse, 12; Black-capped Chickadee, 13; Bluebird, 12. Total, 19 species, 295 individuals.—Robert Sell, Philips Crawford, Mary Belle Johnston and I. H. Johnston.

Grafton, W. Va.—Dec. 26; 8.30 A.M. to 12 M. Cloudy; ground snow-covered; wind east, light; temp. 25° to 28°. Downy Woodpecker, 3; Slate-colored Junco, 20; Song Sparrow, 9; Cardinal, 1; Carolina Wren, 3; Tufted Titmouse, 4; Chickadee, 4. Total, 7 species, 44 individuals.—A. J. Dadisman.

Lewisburg, W. Va.—Dec. 24; 1.40 to 5 P.M. Clouds light; ground bare; wind south, light; temp. 40°. Turkey Vulture, 5; Red-tailed Hawk, 1; Barred Owl, 1; Hairy Woodpecker, 3; Downy Woodpecker, 4; Pileated Woodpecker, 2; Red-bellied Woodpecker, 7; Flicker, 3; American Crow, 1,500; Meadowlark, 5; Goldfinch, 1; Tree Sparrow, 20; Slate-colored Junco, 54; Migrant Shrike, 1; Mockingbird,1; White-breasted Nuthatch, 8; Tufted Titmouse, 9; Golden-crowned Kinglet, 1; Bluebird, 12. Total, 19 species, 1,638 individuals.—Charles O. Handley.

Boone, N. C.—Dec. 24; 8.30 to 11.30 A.M. and 2 to 3.30 P.M. Partly cloudy; ground bare; wind variable, light; temp. at start 40°. Sharp-shinned Hawk, 1; American Crow, 3; Meadowlark, 28; Goldfinch, 11; Field Sparrow, 10; Junco, 103; Song Sparrow, 8; Towhee, 1; Cardinal, 1; Carolina Wren, 3; House Wren, 1; Winter Wren, 3; Brown Creeper, 2; White-breasted Nuthatch, 9; Red-breasted Nuthatch, 6; Tufted Titmouse, 16; Chickadee, 4; Bluebird, 7. Total, 19 species, 218 individuals.—Roy M. Brown.

Lexington, N. C.—Dec. 27; 9.30 A.M. to 4.30 P.M. Fair to hazy: ground bare; wind southeast to south, light; temp. 44° to 50°. Mourning Dove, 1; Turkey Vulture, 21; Sparrow Hawk, 1; Downy Woodpecker, 1; Yellow-bellied Sapsucker, 2; Northern Flicker, 9; Blue Jay, 12; Crow, 15; Purple Finch, 10; Goldfinch, 13; White-throated Sparrow, 50: Chipping Sparrow, 15; Field Sparrow, 30; Slate-colored Junco, 100; Song Sparrow, 26; Fox Sparrow, 2; Towhee, 4; Cardinal, 20; Mockingbird, 5; Carolina Wren, 12; House Wren, 2; Long-billed Marsh Wren, 1; White-breasted Nuthatch, 4; Tufted Titmouse, 4; Carolina Chickadee, 20; Golden-crowned Kinglet, 3; Bluebird, 8. Total, 27 species, 39 individuals.—Theodore Andrews.

Columbia, S. C. (Outskirts).—Dec. 27; 11 A.M. to 1 P.M. Clear; ground bare; wind southwest, light; temp. 47°. Black Vulture, 30; Red-tailed Hawk, 2; Red-headed Woodpecker, 6; Flicker, 1; Blue Jay, 12; Goldfinch, 7; White-throated Sparrow, 15; Slate-colored Junco, 35; Song Sparrow, 6; Red-eyed Towhee, 3; Loggerhead Shrike, 1; Mockingbird, 3; Carolina Wren, 7; Brown Creeper, 1; Carolina Chickadee, 8; Golden-crowned Kinglet, 2; Ruby-crowned Kinglet, 8. Total, 17 species, 147 individuals.—Belle Williams.

Spartanburg, S. C.—Dec. 25; 10 A.M. to 1 P.M. Cloudy, beginning to rain about noon; ground bare; wind southwest, brisk; temp. 52°. Bob-white, 3; Turkey Vulture, 2; Southern Downy Woodpecker, 3; Sparrow Hawk, 1; Flicker, 7; Blue Jay, 2; American Crow, 1; Meadowlark, 15; Purple Finch, 14; Goldfinch, 13; Field Sparrow, 15; Slate-colored Junco, 32; Song Sparrow, 6; Towhee, 1; Cardinal, 6; Mockingbird, 2; Carolina Wren, 3; Brown Creeper, 1; Red-breasted Nuthatch, 1; Tufted Titmouse, 1; Carolina Chickadee, 8; Golden-crowned Kinglet, 4; Bluebird, 1. Total, 23 species, 142 individuals.—Gabriel Cannon.

Atlanta, Ga. (Piedmont Park, Collier's Woods and South River Valley).—Dec. 26; 5.45 A.M. to 5.30 P.M. Clear; wind west at start, changing to south later; temp. at start, 27°. Wilson's Snipe, 3; Killdeer, 31; Mourning Dove, 1; Turkey, Vulture, 7; Black Vulture, 1; Cooper's Hawk, 1; Red-tailed Hawk, 1; Red-shouldered Hawk, 2; Sparrow Hawk, 2; Hairy Woodpecker, 2; Southern Downy Woodpecker, 5; Yellow-bellied Sapsucker, 4; Pileated Woodpecker, 2; Red-headed Woodpecker, 4; Red-bellied Wood-

pecker, 1; Flicker, 20; Phœbe, 3; Blue Jay, 60; Crow, 10; Red-winged Blackbird, 43; Meadowlark, 43; Purple Grackle, 1; Purple Finch, 100; Goldfinch, 100; Vesper Sparrow, 2; Savannah Sparrow, 5; White-throated Sparrow, 75; Chipping Sparrow, 4; Field Sparrow, 15; Song Sparrow, 30; Swamp Sparrow, 20; Junco, 50; Cardinal, 12; Towhee, 6; Cedar Waxwing, 50; Loggerhead Shrike, 3; Myrtle Warbler, 5; Pine Warbler, 2; Maryland Yellowthroat, 2; American Pipit, 2; Mockingbird, 5; Brown Thrasher, 1; Carolina Wren, 12; House Wren, 1; Winter Wren, 5; Brown Creeper, 9; White-breasted Nuthatch, 6; Brown-headed Nuthatch, 3; Tufted Titmouse, 6; Carolina Chickadee, 10; Golden-crowned Kinglet, 10; Ruby-crowned Kinglet, 8; Hermit Thrush, 2; Robin, 53; Bluebird, 45. Total, 55 species, 906 individuals.—W. E. Hannum and J. M. Sanford.

Goose Creek (10 miles west of St. Marks), Fla.—Dec. 29; 5.45 A.M. to 5.45 P.M. Fair; wind west, moderate; temp. 55° to 80°. Country visited: fresh and salt-water marshes, pine woods, hammocks, shores and beaches of the gulf. Horned Grebe, 8; Loon, 2; Herring Gull, 50; Ring-billed Gull, 2; Laughing Gull, 1; Florida Cormorant, 115; Brown Pelican, 1; Hooded Merganser, 13; Mallard, 1,000; Black Duck, 500; Baldpate, 75; Green-winged Teal, 1; Shoveler, 4; Pintail, 1,000; Redhead, 1; Lesser Scaup, 500; Bufflehead, 8; Canada Goose, 100; Great Blue Heron, 28; Louisiana Heron, 18; Little Blue Heron, 9; Florida Clapper Rail, 20; Wilson's Snipe, 5; Least Sandpiper, 12; Sanderling, 25; Western Willet, 2; Black-bellied Plover, 5; Killdeer, 10; Semipalmated Plover, 2; Turnstone, 4; Turkey Vulture, 10; Black Vulture, 25; Marsh Hawk, 5; Red-tailed Hawk, 2; Florida Red-shouldered Hawk, 1; Broad-winged Hawk, 1; Bald Eagle, 2; Florida Barred Owl, 2; Great Horned Owl, 2; Kingfisher, 3; Southern Downy Woodpecker, 2; Yellow-bellied Sapsucker, 2; Red-bellied Woodpecker, 10; Phœbe, 7; Florida Blue Jay, 10; Crow, 10; Fish Crow, 2,500; Red-winged Blackbird, 75; Southern Meadowlark, 10; Boat-tailed Grackle, 500; Goldfinch, 25; Savannah Sparrow, 3; Nelson's Sharp-tailed Sparrow, 2 (specimen taken); Louisiana Seaside Sparrow, 8; Song Sparrow, 1; Swamp Sparrow, 6; Towhee, 50; White-eyed Towhee, 4; Cardinal, 15; Tree Swallow, 25; Loggerhead Shrike, 1; Solitary Vireo, 3; Orange-crowned Warbler, 1; Myrtle Warbler, 30; Yellow-throated Warbler, 1; Pine Warbler, 25; Palm Warbler, 12; Yellow Palm Warbler, 35; Florida Yellowthroat, 25; Pipit, 4; Mockingbird, 3; Brown Thrasher, 10; Carolina Wren, 6; Winter Wren, 2; Short-billed Marsh Wren, 2; Prairie Marsh Wren, 15; Brown Creeper, 1; Brown-headed Nuthatch, 5; Tufted Titmouse, 6; Carolina Chickadee, 15; Golden-crowned Kinglet, 4; Ruby-crowned Kinglet, 35; Blue-gray Gnatcatcher, 3; Hermit Thrush, 2; Bluebird, 1. Total, 85 species, 7,085 individuals. Seen also, Pied-billed Grebe, Royal Tern, Ring-necked Duck, Red-backed Sandpiper, Semipalmated Sandpiper, Greater Yellowlegs, Mourning Dove, Cooper's Hawk, Sparrow Hawk and Flicker, making a grand total of 95 species in three days.—Ludlow Griscom.

Horseshoe Plantation, Fla. (18 miles northwest of Tallahassee).—Dec. 25; 6.30 A.M. to 6.30 P.M. Fair; calm; temp. 30° to 62° to 40°. Country visited: shores of the Tamonia, live oak groves, gum swamps, pine woods, cotton fields and pasture land. Pied-billed Grebe, 1; Lesser Scaup, 4; Ring-necked Duck, 1,000; Great Blue Heron, 3; Coot, 75; Wilson's Snipe, 2; Killdeer, 5; Bob-white, 2; Mourning Dove, 75; Ground Dove, 1; Turkey Vulture, 25; Black Vulture, 11; Sharp-shinned Hawk, 1; Buteo sp., 1; Sparrow Hawk, 1; Florida Barred Owl, 1; Kingfisher, 1; Southern Hairy Woodpecker, 1; Southern Downy Woodpecker, 3; Yellow-bellied Sapsucker, 5; Red-bellied Woodpecker, 20; Flicker, 25; Phœbe, 25; Florida Blue Jay, 20; Crow, 100; Red-winged Blackbird, 250; Southern Meadowlark, 2; Goldfinch, 100; Vesper Sparrow, 50; Savannah Sparrow, 6; White-throated Sparrow, 150; Chipping Sparrow, 150; Field Sparrow, 2; Song Sparrow, 3; Swamp Sparrow, 5; Towhee, 20; Cardinal, 50; Cedar Waxwing, 15; Loggerhead Shrike, 3; Orange-crowned Warbler, 3; Myrtle Warbler, 100; Pine Warbler, 30; Palm Warbler, 6; Yellow Palm Warbler, 10; Maryland Yellowthroat, 3;

Pipit, 25; Mockingbird, 6; Catbird, 2; Brown Thrasher, 25; Carolina Wren, 25; House Wren, 2; Winter Wren, 2; Brown Creeper, 1 (second county record); Tufted Titmouse, 1; Carolina Chickadee, 8; Golden-crowned Kinglet, 4; Ruby-crowned Kinglet, 150; Blue-gray Gnatcatcher, 2; Hermit Thrush, 10; Robin, 100; Bluebird, 10. Total, 61 species, 2,614 individuals. Seen yesterday, Mallard, 9; Bald Eagle, 1; Solitary Vireo, 2; White-eyed Vireo, 1; Black and White Warbler, 2; Wild Turkey, 10. Ducks, hawks, Icteridæ and sparrows noticeably scarce.—Griscom Bettle and Ludlow Griscom.

Tampa, Fla.—Dec. 26; 9 A.M. to 12 M. and 2 to 5 P.M. Clear; wind northwest, steady; tide out all day; temp. 40°. Laughing Gull, 1; Bonaparte's Gull, 1; Brown Pelican, 9; Lesser Scaup, 75; Ward's Heron, 2; Little Blue Heron, 5; Killdeer, 15; Mourning Dove, 3; Turkey Vulture, 10; Black Vulture, 4; Marsh Hawk, 1; Bald Eagle, 1; Kingfisher, 1; Red-headed Woodpecker, 1; Florida Blue Jay, 5; Towhee, 1; Tree Sparrow, 14; Loggerhead Shrike, 6; Myrtle Warbler, 20; Yellow-throated Warbler, 1; Palm Warbler, 60; Prairie Warbler, 1; Mockingbird, 12; House Wren, 2; Ruby-crowned Kinglet, 2; Blue-gray Gnatcatcher, 3. Total, 26 species, about 260 individuals.—Mrs. Herbert R. Mills.

Anniston, Ala.—Dec. 24; 1 to 6 P.M. Cloudy; wind south, 10 miles; temp. 63°. Coot, 1 (recently captured); Mourning Dove, 1; Turkey Vulture, 4; Red-tailed Hawk, 1 (recently captured); Southern Downy Woodpecker, 3; Yellow-bellied Sapsucker, 6; Red-headed Woodpecker, 4; Flicker, 5; Blue Jay, 48; Meadowlark, 26; Goldfinch, 8; White-throated Sparrow, 17; Tree Sparrow, 7; Field Sparrow, 400; Slate-colored Junco, 15; Song Sparrow, 20; Towhee, 18; Cardinal, 8; Cedar Waxwing, 12 (on 26th); Brown Thrasher, 1; Mockingbird, 5; Carolina Wren, 4; Brown Creeper, 2; Tufted Titmouse, 1; Carolina Chickadee, 7; Golden-crowned Kinglet, 12; Bluebird, 14. Total, 27 species, 647 individuals.—R. H. Dean.

Copperhill, Tenn. (Ocoee River, from Copperhill, Tenn., to Blue Ridge, Ga.).—Dec. 24; 5.30 A.M. to 6 P.M. Ground bare; wind west, light; temp. 47°. Pied-billed Grebe, 2; Green-winged Teal, 4; Blue-winged Teal, 7; Pintail, 2; Wood Duck, 1; Great Blue Heron, 1; Wilson's Snipe, 3; Killdeer, 10; Bob-white, 14; Mourning Dove, 7; Turkey Vulture, 3; Sharp-shinned Hawk, 2; Cooper's Hawk, 1; Red-tailed Hawk, 2; Red-shouldered Hawk, 1; Sparrow Hawk, 3; Barred Owl, 1; Screech Owl, 2; Hairy Woodpecker, 7; Downy Woodpecker, 3; Red-headed Woodpecker, 4; Flicker, 15; Phœbe, 10; Blue Jay, 25; Crow, 50; Cowbird, 200; Red-winged Blackbird, 300; Meadowlark, 50; Purple Grackle, 30; Goldfinch, 50; Vesper Sparrow, 3; White-throated Sparrow, 50; Chipping Sparrow, 10; Field Sparrow, 20; Junco, 100; Song Sparrow, 1; Swamp Sparrow, 10; Fox Sparrow, 3; Towhee, 20; Cardinal, 10; Cedar Waxwing, 4; Loggerhead Shrike, 2; Mockingbird, 2; Brown Thrasher, 2; Carolina Wren, 4; Bewick's Wren, 1; Winter Wren, 2; Brown Creeper, 4; White-breasted Nuthatch, 2; Brown-headed Nuthatch, 4; Tufted Titmouse, 11; Chickadee, 50; Golden-crowned Kinglet, 2; Ruby-crowned Kinglet, 10; Hermit Thrush, 1; Robin, 12; Bluebird, 50. Total, 57 species, 1,210 individuals.—Glenn H. Marchbanks.

Knoxville, Tenn.—Dec. 26; 8 A.M. to 12 M. Clear; light snow; wind west, light; temp. 25°. Downy Woodpecker, 3; Crow, 1; Junco, 4; Towhee, 1; Cardinal, 3; Carolina Wren, 3; White-breasted Nuthatch, 2; Carolina Chickadee, 15; Tufted Titmouse, 24; Bluebird, 1. Total, 10 species, 57 individuals.—Magnolia Woodward.

Nashville, Tenn.—Dec. 26; 8 A.M. to 1 P.M. Clear; ground bare and wet; wind south, brisk; temp. 29° to 38°. Two different routes. Killdeer, 34 (one flock); Bob-white, 10 (one flock); Mourning Dove, 60 (one flock); Turkey Vulture, 2; Sparrow Hawk, 4; Red-tailed Hawk, 2; Red-shouldered (?) Hawk, 2; Kingfisher, 1; Downy Woodpecker, 8; Hairy Woodpecker, 2; Red-bellied Woodpecker, 6; Yellow-bellied Sapsucker, 6; Northern Flicker, 12; Prairie Horned Lark, 12; Crow, 66; Blue Jay, 3; Meadowlark, 22 (two flocks); Bronzed Grackle, 2; Cowbird, 2000 (one flock); Myrtle Warbler, 1;

Goldfinch, 8; Savannah Sparrow, 5; White-throated Sparrow, 38; Field Sparrow, 40; Song Sparrow, 7; Fox Sparrow, 6; Slate-colored Junco, 70; Towhee, 13; Cardinal, 42; Migrant Shrike, 2; Mockingbird, 20; Carolina Wren, 15; Bewick's Wren, 2; Brown Creeper, 5; Tufted Titmouse, 4; Carolina Chickadee, 8; Golden-crowned Kinglet, 5; Bluebird, 14. Total, 38 species, 2,570 individuals.—A. C. Webb and A. F. Ganier.

Tazewell, Tenn.—Dec. 26; 9.20 A.M. to 2.25 P.M. Cloudy; about 1 in. of snow that fell on the 25th; no wind; temp. 34° at start, 35° at return. Mourning Dove, 7; Turkey Vulture, 5; Sharp-shinned Hawk, 1; Red-shouldered Hawk, 1; Hairy Woodpecker, 2; Downy Woodpecker, 4; Yellow-bellied Sapsucker, 1; Red-bellied Woodpecker, 1; Flicker, 6; Blue Jay, 17 American Crow, 4; Purple Finch, 33; Goldfinch, 6; Vesper Sparrow, 6; Savannah Sparrow, 10; White-throated Sparrow, 10; Field Sparrow, 20; Junco, 29; Song Sparrow, 10; Towhee, 3; Cardinal, 7; Cedar Waxwing, 31; Myrtle Warbler, 39; Mockingbird, 4; Carolina Wren, 5; Winter Wren, 1; White-breasted Nuthatch, 5; Tufted Titmouse, 4; Chickadee, 6; Golden-crowned Kinglet, 5; Hermit Thrush, 1; Bluebird, 19. Total, 32 species, 303 individuals.—H. Y. Hughes.

Lexington, Ky.—Dec. 26; 10 A.M. to 4.30 P.M. Clear; ground almost bare; wind south, light; temp. 32° at start, 36° at return. Killdeer, 9; Turkey Vulture, 1; Flicker, 25; Horned Lark, 50; Crow, 12; Meadowlark, 7; Junco, 10; Song Sparrow, 6; Mockingbird, 1 (very tame, probably escaped from a cage); Winter Wren, 1; Carolina Wren, 1; Brown Creeper, 2; Chickadee, 10; kinglet sp., 2. Total, 14 species, about 135 individuals.—Kentucky Audubon Society: (Miss) Belle Clay, President; (Miss) Emily Barnes and Eugene Simpson, Assistant Secretary.

Hinsdale, Ill.—Dec. 24; 11 A.M. to 3 P.M. Cloudy; ground snow-covered; no wind; temp. 32°. Hairy Woodpecker, 3; Downy Woodpecker, 7; Yellow-bellied Sapsucker, 1; Blue Jay, 10; American Crow, 8; Purple Finch, 15; Goldfinch, 12; Tree Sparrow, 100; Junco, 12; Brown Creeper, 7; White-breasted Nuthatch, 10; Tufted Titmouse, 1; Chickadee, 20; Golden-crowned Kinglet, 4. Total, 14 species, 210 individuals.—Mrs. C. E. Raymond.

La Grange, Ill.—Dec. 26; 9.30 A.M. to 12.30 P.M. and 1.15 to 4 P.M. 5 in. of snow; wind northwest; temp. 25°. Herring Gull, 1; Screech Owl, 1; Hairy Woodpecker, 4; Downy Woodpecker, 5; Flicker, 1; Prairie Horned Lark, 1; Blue Jay, 7; Crow, 20; Evening Grosbeak, 15; Purple Finch, 5; Goldfinch, 12; Lapland Longspur, 4; Tree Sparrow, 517; Junco, 20; Song Sparrow, 1; Towhee, 1; Cardinal, 4; Northern Shrike, 1; Brown Creeper, 3; White-breasted Nuthatch, 6; Tufted Titmouse, 2; Chickadee, 3; Robin, 1. Total, 23 species, 635 individuals. Barred Owl seen on 18th, Golden Eagle on 21st.—E. F. Hulsberg, Sidney Wade and J. D. Watson .

Moline, Ill.—Dec. 22; 9 A.M. to 12 M. Sunny; ground snow-covered; heavy hoar frost; no wind; temp. 20°. Hairy Woodpecker, 5; Downy Woodpecker, 7; Yellow-bellied Sapsucker, 2; Blue Jay, 8; Crow, 2; Tree Sparrow, 2; Junco, 30; Cardinal, 2; Brown Creeper, 1; White-breasted Nuthatch, 8; Tufted Titmouse, 2; Chickadee, 14. Total, 12 species, 83 individuals.—Emma J. Sloan.

Peoria, Ill.—Dec. 27; 1 to 3 P.M. Cloudy; 6 in. of snow; wind northwest, light; temp. 18°. Herring Gull, 25; Canvasback, 30; Downy Woodpecker, 2; Goldfinch, 2; Tree Sparrow, 18; Junco, 48; Cardinal, 8; Cedar Waxwing, 4; White-breasted Nuthatch, 5; Red-breasted Nuthatch, 3; Tufted Titmouse, 6; Chickadee, 18; Robin, 2. Total, 13 species, 171 individuals.—W. H. Packard and Reginald F. Packard.

Rantoul, Ill.—Dec. 25; 11 A.M. to 2 P.M. Cloudy; wind northwest, strong; temp. 22°. Prairie Hen, 40; Mourning Dove, 2; Cooper's Hawk, 2; Red-tailed Hawk, 1; Red-shouldered Hawk, 1; American Rough-legged Hawk, 5; American Sparrow Hawk, 1; Short-eared Owl, 3; Screech Owl, 1; Northern Downy Woodpecker, 5; Yellow-bellied Sapsucker, 2; Northern Flicker, 2; Horned Lark, 60; Prairie Horned Lark, 30; Blue Jay, 15; Bronzed Grackle, 2; Lapland Longspur, 4; Tree Sparrow, 200; Junco, 100;

Song Sparrow, 8; Swamp Sparrow, 2; Cardinal, 16; Brown Creeper, 1; White-breasted Nuthatch, 10; Red-breasted Nuthatch, 4; Tufted Titmouse, 30; Chickadee, 24; Golden-crowned Kinglet, 4. Total, 28 species, 575 individuals.—George E. Ekblaw and Eddie L. Ekblaw.

Zuma Township, Rock Island Co., Ill.—Dec. 26; 8 A.M. to 3 P.M. Cloudy; ground partly covered with snow and ice; wind south, moderate; temp. 26° to 37°. Bob-white, 25; Marsh Hawk, 1; Rough-legged Hawk, 1; Great Horned Owl, 1; Hairy Woodpecker, 6; Downy Woodpecker, 12; Red-headed Woodpecker, 3; Red-bellied Woodpecker, 8; Flicker, 2; Blue Jay, 10; Crow, 5; Meadowlark, 1; Tree Sparrow, 200; Junco, 125; Cardinal, 2; White-breasted Nuthatch, 18; Tufted Titmouse, 6; Chickadee, 35. Total, 18 species, 486 individuals.—J. J. Schafer.

Fort Wayne, Ind.—Dec. 26; 8.45 A.M. to 1 P.M. Cloudy, clearing by noon; 8 in. of snow; wind south, light; temp. 22°. Downy Woodpecker, 10; Flicker, 6; Blue Jay, 12; Crow, 13; Tree Sparrow, 35; Slate-colored Junco, 31; Song Sparrow, 19; Cardinal, 5; White-breasted Nuthatch, 13; Tufted Titmouse, 15; Black-capped Chickadee, 21; Robin, 2. Total, 12 species, 182 individuals.—Chas. A. Stockbridge and A. A. Ringwalt.

Indianapolis, Ind.—Dec. 23; 8 to 11 A.M. Clear; ground bare; wind southwest, light; temp. 42°. Marsh Hawk, 1; Sparrow Hawk, 2; Hairy Woodpecker, 3; Downy Woodpecker, 3; Flicker, 4; Blue Jay, 4; Crow, 105 Meadowlark, 3; Bronzed Grackle, 1; Goldfinch, 3; Tree Sparrow, 50; Junco, 60; Song Sparrow, 10; Cardinal, 42; Brown Creeper, 6; White-breasted Nuthatch, 2; Tufted Titmouse, 17; Black-capped Chickadee, 9; Golden-crowned Kinglet, 4. Total, 19 species, 329 individuals.—Etta S. Wilson.

LaFayette, Ind.—Dec.25; 10 A.M. to 12.30 P.M. Cloudy; 12 in. of snow; snowed all of previous day; branches and weeds loaded with snow; wind northwest; temp. about 30°. Hawk (Red-tailed or Red-shouldered), 2; Downy Woodpecker, 3; Red-headed Woodpecker, 1; Blue Jay, 9; Crow, 50; Bronzed Grackle, 1; Goldfinch, 4; Junco, 75; Song Sparrow, 5; Towhee, 1; Cardinal, 5; White-breasted Nuthatch, 3; Tufted Titmouse, 12. Total, 13 species, 171 individuals. This is the first winter record for Grackle and Towhee in this locality.—M. L. Fisher.

Marco, Greene Co., Ind.—9.20 to 10.40 A.M. Nearly clear; ground bare and thawing; wind south, light; temp. 35°. Mallard, 2; Marsh Hawk, 1; Sparrow Hawk, 2; Hairy Woodpecker, 2; Downy Woodpecker, 4; Red-headed Woodpecker, 6; Red-bellied Woodpecker, 4; Flicker, 1; Blue Jay, 12; American Crow, 23; Goldfinch, 7; Tree Sparrow, 100; Junco, 150; Song Sparrow, 2; Cardinal, 8; Carolina Wren, 4; Brown Creeper, 4; Tufted Titmouse, 19+; Chickadee, 18+; Bluebird, 6. Total, 20 species, 373 individuals.—Stella Chambers and Flossie Sheehe.

Richmond, Wayne Co., Ind.—Dec. 26; 9 A.M. to 12 M. Clear; ground bare; wind southeast; temp. 36°. In open farmed fields. Hairy Woodpecker, 1; Downy Woodpecker, 1; Red-bellied Woodpecker, 1; Prairie Horned Lark, 3; Blue Jay, 2; Crow, 4; Tree Sparrow, 40; Junco, 24; Song Sparrow, 2; Cardinal, 1 male; White-breasted Nuthatch, 5; Tufted Titmouse, 4; Chickadee, 10; Golden-crowned Kinglet, 5. Total, 14 species, 101 individuals.—Lucy V. Baxter Coffin, Maria Baxter, P. B. Coffin and J. G. Suttoy.

Roachdale, Ind.—Dec. 26; 8 A.M. to 1 P.M. Partly cloudy; 4 in. of snow; wind southeast, light; temp. 25° to 32°. Cooper's (?) Hawk, 1; Mourning Dove, 1; Downy Woodpecker, 6; Red-bellied Woodpecker, 2; Flicker, 12; Prairie Horned Lark, 70; Blue Jay, 4; American Crow, 34; Goldfinch, 11; Tree Sparrow, 52; Junco, 65; Song Sparrow, 14; Cardinal, 4; Carolina Wren, 3; White-breasted Nuthatch, 5; Tufted Titmouse, 15; Chickadee, 30; Robin, 6; Bluebird, 1. Total, 19 species, 346 individuals.—Ward J. Rice.

Cadiz, Ohio.—Dec. 26; 9.15 A.M. to 12.45 P.M. Cloudy; wind southwest, moderately strong; 3 in. of snow on the ground and 1 in. of soft snow on the sides of the trees exposed

to the west winds; temp. 23° to 28°. Red-tailed Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 1; Red-bellied Woodpecker, 5; Crow, 4; Tree Sparrow, 10; Junco, 1; Song Sparrow, 8; Towhee, 1 (heard); Cardinal, 4; White-breasted Nuthatch, 4; Tufted Titmouse, 13; Chickadee, 4. Total, 13 species, 57 individuals.—HARRY B. MCCONNELL, JOHN WORLEY and RAYMOND TIMMONS.

Canton, Ohio.—Dec. 25; 7 A.M. to 3.15 P.M. Cloudy; driving rain till 9 A.M., snow storm after 12.15 P.M.; ground bare in morning, becoming snow-covered in afternoon; wind southwest and strong in morning, changing to northwest and more moderate in afternoon; temp. 46° to 35°. (Cooper's?) Hawk, 1; Red-shouldered Hawk, 2; Hairy Woodpecker, 1; Downy Woodpecker, 2; Tree Sparrow, 85; Junco, 1; Song Sparrow, 4; Cardinal, 9; White-breasted Nuthatch, 3; Tufted Titmouse, 8. Total, 10 species, 111 individuals.—EDWARD D. KIMES.

Canton, Ohio.—Dec. 27; 10 A.M. to 2 P.M. Clear to cloudy; ground nearly bare, thawing; temp. 20° to 42°. Ruffed Grouse, 1; Red-shouldered Hawk, 1; Hairy Woodpecker, 2; Downy Woodpecker, 14; Blue Jay, 2; Goldfinch, 2; Tree Sparrow, 40; Junco, 30; Song Sparrow, 12; Cardinal, 3; White-breasted Nuthatch, 12; Tufted Titmouse, 10; Golden-crowned Kinglet, 4. Total, 13 species, 133 individuals. —MAY S. DANNER and MARY KING.

Cleveland, Ohio.—Dec. 26; 9 A.M. to 12 M. Cloudy; light snow on ground; wind southwest, moderate; temp. 28°. Herring Gull, 1; Sparrow Hawk, 1; Screech Owl, 1; Hairy Woodpecker, 1; Downy Woodpecker, 7; Flicker, 1; Blue Jay, 7; Crow, 2; Tree Sparrow, 5; Song Sparrow, 5; Cardinal, 5; White-breasted Nuthatch, 6; Robin, 1. Total, 13 species, 43 individuals.—HARRY J. GINTHER.

Delphos, Ohio.—Dec. 22; 8.45 A.M. to 1.45 P.M. Clear; ground bare; wind southwest, moderate; temp. 38°. Mourning Dove, 2; Sparrow Hawk, 1; Barred Owl, 3; Hairy Woodpecker, 3; Downy Woodpecker, 13; Northern Flicker, 7; Blue Jay, 10; Crow, 14; Tree Sparrow, 85; Slate-colored Junco, 30; Song Sparrow, 6; Cardinal, 1; Brown Creeper, 2; White-breasted Nuthatch, 12; Tufted Titmouse, 17; Chickadee, 1. Total, 16 species, 207 individuals.—L. H. GRESSLEY.

East Liberty, Ohio.—Dec. 27; 10 A.M. to 2.30 P.M. Slightly cloudy, with some sleet in P.M.; ground bare; wind west, strong; temp. 45° in A.M. Distance, 4 miles. Sparrow Hawk, 2; Downy Woodpecker, 4; Horned Lark, 9; Blue Jay, 2; Crow, 15; Tree Sparrow, 43; Junco, 1; Song Sparrow, 2; Cardinal, 2; White-breasted Nuthatch, 2; Tufted Titmouse, 1; Chickadee, 3. Total, 12 species, 86 individuals.—RUSKINS S. and C. A. FREER.

Hillsboro, Ohio.—Dec. 27; 9 A.M. to 12 M. Cloudy; ground bare; wind southwest, strong; temp. 40°. Bob-white, 14 (found by my brother); Mourning Dove, 16; Sparrow Hawk, 1; Hairy Woodpecker, 2; Downy Woodpecker, 3; Red-bellied Woodpecker, 3; Flicker, 7; Blue Jay, 12; Crow, 6; Tree Sparrow, 30; White-throated Sparrow, 4; Slate-colored Junco, 100; Song Sparrow, 25; Towhee, 1; Cardinal, 5; Brown Creeper, 1; Tufted Titmouse, 14; Chickadee, 12; Bluebird, 9. Total, 19 species, 265 individuals.—LUTEA E. ROADS.

Huron, Ohio.—Dec. 26; 7.30 A.M. to 2 P.M. Cloudy; 1 in. of snow; wind southwest, fresh; temp. 27°. Herring Gull, 18; Bonaparte's Gull, 300; Merganser, 1; Bufflehead, 2; Bald Eagle, 3; Hairy Woodpecker, 1; Downy Woodpecker, 10; Blue Jay, 2; Bronzed Grackle, 1; Snow Bunting, 1; Tree Sparrow, 45; Slate-colored Junco, 7; Song Sparrow, 4; Cardinal, 10; Carolina Wren, 1; White-breasted Nuthatch, 6; Tufted Titmouse, 5; Chickadee, 2; Golden-crowned Kinglet, 2. Total, 19 species, 421 individuals.—H. G. MORSE and D. C. REED.

Lisbon, Ohio.—12 M. to 3.30 P.M. Clear at first, rapidly growing dark; light snow, melting; wind south, brisk. Hawk sp., 1; Hairy Woodpecker, 1; Red-bellied Woodpecker, 2; Tree Sparrow, 15; Song Sparrow, 1; Cardinal, 3; White-breasted Nut-

hatch, 3; Tufted Titmouse, 4. Total, 8 species, 30 individuals.—C. A. White, Robert J. Hole and Maurice E. Hole.

New Paris, Ohio.—Dec. 26; 1 to 4 P.M. Ground almost bare; wind west, brisk; temp. 34°. Sharp-shinned Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 1; Red-bellied Woodpecker, 1; Flicker, 10; Blue Jay, 2; Crow, 200; Slate-colored Junco, 32; Song Sparrow, 8; Cardinal, 7; White-breasted Nuthatch, 2; Chickadee, 8. Total, 12 species, 285 individuals.—W. H. Wisman and A. H. Wilson.

Salem, Ohio.—Dec. 26; 8.10 to 10.45 A.M. Clear in early morning, then clouding; 1 in. of snow; wind northwest; temp. 22°. Walked 5 miles; home by trolley. Killdeer, 1; Ruffed Grouse, tracks in snow, 1; Downy Woodpecker, 3; Blue Jay, 1; Tree Sparrow, 2; Song Sparrow, 1; Cardinal, 2; White-breasted Nuthatch, 6; Tufted Titmouse, 2; Black-capped Chickadee, 1. Total, 10 species, 20 individuals.—H. W. Weisgerber.

West LaFayette, Ohio.—Dec. 24; 9.30 A.M. to 3.30 P.M. Cloudy; ground bare; wind northwest; temp. 34°. Walked 11 miles. Hairy Woodpecker, 1; Downy Woodpecker, 11; Red-bellied Woodpecker, 10; Flicker, 1; Blue Jay, 5; Crow, 4; Tree Sparrow, 350; Slate-colored Junco, 40; Song Sparrow, 5; Cardinal, 7; Carolina Wren, 3; White-breasted Nuthatch, 9; Tufted Titmouse, 2; Chickadee, 6; Bluebird, 10. Total, 15 species, 464 individuals.—Sheridan F. Wood and Kenneth M. Wood.

Xenia, Ohio.—8 to 10 A.M. and 2 to 4 P.M. Cloudy, snow flurries; ground bare; wind southwest, brisk; temp. 36°. Ring-necked Pheasant, 1; Downy Woodpecker, 5; Red-bellied Woodpecker, 2; Blue Jay, 11; American Crow, 6; Tree Sparrow, 61; Slate-colored Junco, 6; Song Sparrow, 7; Cardinal, 2; Brown Creeper, 1; White-breasted Nuthatch, 4; Tufted Titmouse, 3; Black-capped Chickadee, 12; Golden-crowned Kinglet, 5. Total, 14 species, 126 individuals.—Helen Ankeney and Albert S. Ankeney.

Youngstown, Ohio.—Dec. 25; 8 A.M. to 4 P.M. Rain nearly all day; wind southerly, brisk at times; temp. 46° to 33°; walked about 10 miles. Ruffed Grouse, 2; Barred Owl, 1; Great Horned Owl, 2; Hairy Woodpecker, 6; Downy Woodpecker, 30; Red-bellied Woodpecker, 1; Blue Jay, 21; Goldfinch, 4; Tree Sparrow, 54; Slate-colored Junco, 4; Song Sparrow, 20; Cardinal, 25; Winter Wren, 1; Brown Creeper, 4; White-breasted Nuthatch, 59; Red-breasted Nuthatch, 2; Tufted Titmouse, 25; Chickadee, 133; Golden-crowned Kinglet, 29; Wood Thrush, 1. Total, 20 species, 424 individuals. The Wood Thrush was possibly crippled, but could fly quite well.—George L. Fordyce, Volney Rogers, C. A. Leedy, and Mr. and Mrs. Willis H. Warner.

Detroit, Mich.—Dec. 21; 2 to 4 P.M. Clear; light snow; no wind; temp. 26°. Distance covered about three miles on Belle Isle. Herring Gull, 5; Ring-necked Pheasant, 2; Hairy Woodpecker, 1; Downy Woodpecker, 4; Brown Creeper, 1; White-breasted Nuthatch, 6; Black-capped Chickadee, 10; Golden-crowned Kinglet, 6. Total, 8 species, 35 individuals.—Miss Julia Ives and Mrs. F. W. Robinson.

Kalamazoo, Mich.—10 A.M. to 1 P.M. Cloudy; 1 ft. of fresh snow; wind northwest; temp. 32°. Hairy Woodpecker, 1; Downy Woodpecker, 1; Crow, 25; White-breasted Nuthatch, 3; Tufted Titmouse, 1; Chickadee, 8; Robin, 2. Total, 7 species, 41 individuals.—W. E. Praeger.

Elkhorn, Lauderdale Lakes and vicinity, Wis.—8.30 A.M. to 12 M. and 2 to 5 P.M. Cloudy; ground snow-covered; wind southeast changing to southwest; temp. 28°. Mallard, 11; Wilson's Snipe, 1; Hairy Woodpecker, 8; Downy Woodpecker, 7; Blue Jay, 4; American Crow, 212; Redpoll, 15; Tree Sparrow, 12; Slate-colored Junco, 5; Cedar Waxwing, 4; White-breasted Nuthatch, 7; Black-capped Chickadee, 43; Robin, 1. Total, 13 species, 330 individuals. The combined result of two groups of workers; each noted nine species.—Lula Dunbar, Constance Beckwith, Mabel Beckwith, Helen Martin, Mattie Skiff, Miriam Skiff, Margaret Austin and Sarah Francis.

Green Lake, Wis.—Dec. 25; 9 A.M. to 1.30 P.M. Cloudy; snow on ground; wind southwest, strong. Bob-white, 12; Hairy Woodpecker, 4; Downy Woodpecker, 6; Blue

Jay, 3; Crow, 2; Rusty Blackbird, 3; White-crowned Sparrow, 1; Brown Creeper, 1; White-breasted Nuthatch, 9; Chickadee, 20. Total, 10 species, 61 individuals. Practically all seen on our Bird Refuge. The White-crowned Sparrow has never been seen here at this time of year before.—Victor Kutchin and Donna Kutchin.

Hartland, Wis.—Dec. 22; 8.30 A.M. to 4 P.M. Partly cloudy; ground snow-covered; wind southeast, light; temp. 24°. Screech Owl, 1; Hairy Woodpecker, 2; Downy Woodpecker, 2; Blue Jay, 3; Crow, 11; Purple Finch, 4; Pine Siskin, 5; Tree Sparrow, 28; Slate-colored Junco, 6; Brown Creeper, 1; White-breasted Nuthatch, 6; Chickadee, 14. Total, 12 species, 83 individuals.—Susie L. Simonds.

Oregon to South Madison, Wis.—Dec. 24; 8.45 A.M. to 4 P.M. Overcast; 1½ in. of snow, crusted; wind northwest, light; temp. 25°. Rough-legged Hawk, 1; Hairy Woodpecker, 3; Blue Jay, 4; Crow, 15; Tree Sparrow, 120; Slate-colored Junco, 6; White-breasted Nuthatch, 4; Chickadee, 7. Total, 8 species, 160 individuals.—Warner Taylor and Norman A. W. Betts.

Reedsburg, Wis. (distance covered, 3 miles.).—Dec. 22; 9 to 11 A.M. and 1 to 2 P.M. Cloudy changing to storm of sleet and snow; 2 in. of snow; wind southeast, light; temp. 29° to 34°. Blue Jay, 9; White-breasted Nuthatch, 2; Chickadee, 14. Total, 3 species, 25 individuals. Since the cold rain and sleet which coated everything with ice, the birds with the exception of Chickadees have been unusually scarce.—Ethel Allis Nott.

Westfield, Wis.—Dec. 22; 8.30 to 10.30 A.M. Cloudy; ground covered by light snow; wind south, light; temp. 30°. Ruffed Grouse, 1; Downy Woodpecker, 2; Blue Jay, 3; Goldfinch, 40; Tree Sparrow, 20; White-breasted Nuthatch, 3; Chickadee, 12. Total, 7 species, 81 individuals.—Patience Nesbitt.

Cambridge, Minn.—Dec. 27; 8 A.M. to 6 P.M. Clear; 3 in. of snow; wind west, moderate; temp. 4° below zero. Bob-white, 15; Ruffed Grouse, 10; Barred Owl, 4; Hairy Woodpecker, 4; Downy Woodpecker, 3; Blue Jay, 4; Crow, 1; Hoary Redpoll, 5; Redpoll, 100; Lapland Longspur, 4; Tree Sparrow, 4; Brown Creeper, 8; White-breasted Nuthatch, 4; Chickadee, 15; Hudsonian Chickadee, 4. Total, 15 species, 185 individuals.—Lawrence L. Lofstrom.

Bettendorf, Iowa.—Dec. 26; 2 to 4.30 P.M. Cloudy; snow in patches; wind southwest, light; temp. 22°. Hairy Woodpecker, 1; Downy Woodpecker, 20; Red-bellied Woodpecker, 4; Tree Sparrow, 1; Slate-colored Junco, 10; White-breasted Nuthatch, 15; Black-capped Chickadee, 5. Total, 7 species, 56 individuals.—Hugo H. Schroder.

Lanesboro, Iowa.—Dec. 24; 8 A.M. to 1 P.M. Cloudy; 5 in. of snow; wind northwest, light; temp. 31°. Sharp-shinned Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 4; Prairie Horned Lark, 4; Blue Jay, 2; Crow, 17; Red-winged Blackbird, 1; Meadowlark, 3; Goldfinch, 2; Tree Sparrow, 29; Slate-colored Junco, 6; Brown Creeper, 1; White-breasted Nuthatch, 4; Black-capped Chickadee, 9. Total, 14 species, 84 individuals.—Albert Wetter.

Sioux City, Iowa.—Dec. 23; 9.30 A.M. to 3 P.M. Fair; little snow; wind north, brisk; melting. Red-tailed Hawk, 1; Screech Owl, 1; Hairy Woodpecker, 4; Downy Woodpecker, 12; Magpie, 2; American Crow, 15; Goldfinch, 12; Tree Sparrow, 30; Slate-colored Junco, 16; Brown Creeper, 3; White-breasted Nuthatch, 10; Black-capped Chickadee, 18. Total, 12 species, 124 individuals.—Walter W. Bennett and Arthur W. Lindsey.

Sioux City, Iowa.—Dec. 24; 2 to 5 P.M. Clear; little snow; wind north, brisk; temp. about freezing point. Hairy Woodpecker, 4; Downy Woodpecker, 9; Tree Sparrow, 35; Junco, 10; Brown Creeper, 6; White-breasted Nuthatch, 1; Chickadee, 25. Total, 7 species, 90 individuals.—Sioux City Bird Club: Mrs. W. L. Frost, Mrs. H. J. Taylor, Mr. and Mrs. H. G. Burgert and Mrs. E. A. Fields.

Kansas City.—Christmas Week. Combined list from four different localities, by members of the Kansas City Bird Club. Mourning Dove, 5; Marsh Hawk, 1; Red-

tailed Hawk, 3 (and 5 other large hawks sp.); Sparrow Hawk, 1; Barred Owl, 1; Hairy Woodpecker, 8; Downy Woodpecker, 30; Yellow-bellied Sapsucker, 1; Red-headed Woodpecker, 3; Red-bellied Woodpecker, 8; Flicker, 24; Prairie Horned Lark, 50; Blue Jay, 20; Crow, 165; Red-winged Blackbird, 140; Meadowlark, 30; Purple Finch, 3; Goldfinch, 23; Lapland Longspur, 2; Harris's Sparrow, 6; White-crowned Sparrow, 12; Tree Sparrow, 325; Field Sparrow, 4; Slate-colored Junco, 500; Song Sparrow, 7; Lincoln's Sparrow, 1; Cardinal, 70; Migrant Shrike, 1; Carolina Wren, 2; Brown Creeper, 4; White-breasted Nuthatch, 8; Tufted Titmouse, 27; Chickadee, 70; Golden-crowned Kinglet, 7; Robin, 3; Bluebird, 23. Total, 37 species, 1,645 individuals.—Misses Burns, Clark, Dunlezy, Hoffman, Newell, Rackerby; Messrs. Bolt, Burns, Bryant. Dawson, Harris, Hoffmann and Michaels.

Lennox, S. D., and along Sioux River at Canton, S. D.—Dec. 24; 9 to 11 A.M. and 12.30 to 2.30 P.M. Partly cloudy; 4 in. of snow on level with a very few bare spots; wind northwest, light; temp. 34°. Screech Owl, 2; Hairy Woodpecker, 2; Downy Woodpecker, 6; Prairie Horned Lark, 2; Blue Jay, 1; American Crow, 250; Redpoll, 20; American Goldfinch, 2; Tree Sparrow, 29; White-breasted Nuthatch, 6; Black-capped Chickadee, 26; Brown Creeper, 1. Total, 12 species, 347 individuals.—William B. Mallory.

Sioux Falls, S. D.—Dec. 25; 2.15 to 4.45 P.M. Cloudy; ground partly snow-covered; wind south, light; temp. 26°. Hairy Woodpecker, 1; Crow, 9; White-breasted Nuthatch, 2; Chickadee, 3. Total, 4 species, 15 individuals.—Adrian Larson.

Lincoln, Neb. (Stevens Creek and Wyuka Cemetery).—Dec. 26; 8 A.M. to 2 P.M. Cloudy; wind north, light; 3 in. of snow; temp. 30°. Mallard, 1 (seen in flight); Marsh Hawk, 3; Screech Owl, 1; Burrowing Owl, (6 seen near colony on 21st, fresh tracks in snow on 26th); Hairy Woodpecker, 2; Downy Woodpecker, 8; Red-bellied Woodpecker, 1; Northern Flicker, 2; Blue Jay, 1; Crow, 15; Western Meadowlark, 2; Goldfinch, 1; Harris's Sparrow, 4; Tree Sparrow, 100; Slate-colored Junco, 6; Song Sparrow, 2; Arctic Towhee, 1; Cardinal, 8; Brown Creeper, 5; White-breasted Nuthatch, 10; Long-tailed Chickadee, 30; Golden-crowned Kinglet, 1; Townsend's Solitaire, 1; Robin, 1. Total, 24 species, 212 individuals.—C. E. Mickel and R. W. Dawson.

Omaha, Neb.—Dec. 25; 10 A.M. to 3 P.M. Clear till noon; 1 in. of snow with bare spots; wind light, south; temp. 20° to 32°. Open woods and parks just west of town, walked north 5 miles. Hairy Woodpecker, 1; Downy Woodpecker, 7; Blue Jay, 8; Goldfinch, 2; Pine Siskin, 1; Tree Sparrow, 75; Slate-colored Junco, 20; Cardinal, 2; White-breasted Nuthatch, 3; Chickadee, 26. Total, 10 species, 155 individuals.—Solon R. Towne.

Wichita, Kan.—Dec. 27; 2 to 5 P.M. Fair; ground partly covered by a light fall of snow; wind north, medium; temp. 18°. Observers worked in two groups. Marsh Hawk, 1; Krider's Hawk, 1; Kingfisher, 1; Hairy Woodpecker, 1; Downy Woodpecker, 3; Red-bellied Woodpecker, 1; Flicker, 5; Red-shafted Flicker, 3; Prairie Horned Lark, 3; Crow, 1; Red-winged Blackbird, 1; Meadowlark, 2; Goldfinch, 4; Harris's Sparrow, 140; Tree Sparrow, 47; Slate-colored Junco, 42; Shufeldt's Junco, 1; Song Sparrow, 10; Towhee, 2; Cardinal, 30; Brown Thrasher, 1; Carolina Wren, 2; Brown Creeper, 2; White-breasted Nuthatch, 1; Chickadee, 30; Robin, 1. Total, 26 species, 336 individuals.—Mabel Bruce, Hazel Stokes, Ruth Stough, Robert Buckner, Paul Henrion, A. J. Walter Horst, Dwight Isely, Merrill Isely, Austin P. Larrabee and George Sidewell.

Jonesburg, Mo.—Dec. 25; 7 to 8 A.M. and 1 to 4.30 P.M. Cloudy; 10½ in. of snow; wind west, light; temp. 26°. Mourning Dove, 3; Marsh Hawk, 4; Hairy Woodpecker, 3; Downy Woodpecker, 5; Red-bellied Woodpecker, 8; Flicker, 2; Blue Jay, 12; Crow, 24; Purple Finch, 20; Goldfinch, 206; Tree Sparrow, 5; Slate-colored Junco, many large flocks, probably 500; Cardinal, 75; Song Sparrow, 14; White-breasted Nuthatch, 50;

Tufted Titmouse, 75; Chickadee, 75. Total, 17 species, 1,081 individuals.—Ralph K. Wilson.

San Antonio, Tex.—Dec. 26; 10.30 A.M. to 12.30 P.M. and 1.15 to 4.30 P.M. Clear; wind south, strong; temp. 60°. Killdeer, 6; Inca Dove, 4; Turkey Vulture, 28; Marsh Hawk, 3; Sparrow Hawk, 1; Belted Kingfisher, 1; Cactus Woodpecker, 3; Northern Flicker, 5; Red-shafted Flicker, 5; Golden-fronted Woodpecker, 15; Phœbe, 1; Western Meadowlark, 1; Bronzed Grackle, 5; Great-tailed Grackle, 113; Arkansas Goldfinch, 3; Western Lark Sparrow, 1; Slate-colored Junco, 4; Black-throated Sparrow, 1; Song Sparrow, 2; Cardinal, 11; Texas Pyrrhuloxia, 1; Cedar Waxwing, 8; Myrtle Warbler, 4; Western Mockingbird, 10; Curve-billed Thrasher, 1; Cactus Wren, 1; Carolina Wren, 6; Texas Bewick's Wren, 5; Sennett's Titmouse, 10; Plumbeous Chickadee, 14; Golden-crowned Kinglet, 1; Ruby-crowned Kinglet, 7; Blue-gray Gnatcatcher, 1; Bluebird, 1. Total, 34 species, 283 individuals.—Angus J. James.

Taylor, Tex.—2 to 5 P.M., with occasional observations in forenoon. Clear; ground bare; wind 8 miles an hour; temp. 45°, afternoon. Mourning Dove, 13; Turkey Vulture, 57; Red-shouldered Hawk, 1; Sparrow Hawk, 2; Red-bellied Woodpecker, 1; Flicker, 2; Phœbe, 4; Meadowlarks (not singing, but likely both species, mostly Western), 35; Goldfinch, 4; Grasshopper Sparrow, 3; Lark Sparrow, 3; Harris's Sparrow, 20; White-crowned Sparrow, 12; Junco, 12; Song Sparrow, 15; Cardinal, 8; White-rumped Shrike, 3; Myrtle Warbler, 2; Pipit, 5; Mockingbird, 12; Carolina Wren, 1; House Wren, 2; Plumbeous Chickadee, 2; Golden-crowned Kinglet, 2; Ruby-crowned, Kinglet, 1; Bluebird, 3. Total, 26 species, 225 individuals.—H. Tullsen.

Bozeman, Mont.—Dec. 25; 9.30 A.M. to 1 P.M. Partly cloudy; 8 in. of snow; wind westerly, light; temp. 34°. Saw-whet Owl, 1; Magpie, 16; Western Crow, 70; Redpoll, 8; Western Tree Sparrow, 5; Mountain Song Sparrow, 2; Bohemian Waxwing, 60; Long-tailed Chickadee, 8; Northern Shrike, 1. Total, 9 species, 171 individuals.—Nelson Lundwall.

Missoula, Mont. (Elevation 3,250 feet).—Dec. 25; 8.30 A.M. to 12.30 P.M. Partly cloudy, with occasional snow-flurries; 2 in. of snow; wind west, light; temp. 20°. Mallard, 7; Wilson's Snipe, 1; Killdeer, 3; Batchelder's Woodpecker, 1; Red-shafted Flicker, 6; Magpie, 21; Redpoll, 6; Pale Goldfinch, 1; Western Vesper Sparrow, 1; Western Tree Sparrow, 18; Shufeldt's Junco, 15; Mountain Song Sparrow, 12; Bohemian Waxwing, 2; Long-tailed Chickadee, 6. The Snipe, Killdeer and Vesper Sparrow are unusual but identified as positively as is possbile without collecting. Total, 14 species, 100 individuals.—J. A. Cope, E. C. Rogers and J. Kittredge, Jr.

Meridian, Idaho (irrigated farm lands).—Dec. 23; 8.25 A.M. to 3.45 P.M. Clear; ground bare; wind northwest; temp. 32° to 40°; 14 miles. Killdeer, 2; Bob-white, 52; Chinese Pheasant, 40; Western Mourning Dove, 1; Marsh Hawk, 1; hawk sp., 3; Long-eared Owl, 1; Burrowing Owl, 1; Red-shafted Flicker, 15; Pallid Horned Lark, 385 (number probably includes some Dusky Horned Larks); Magpie, 181; Tricolored Blackbird, 180; Western Meadowlark, 35; Brewer's Blackbird, 180; House Finch, 320; Pale Goldfinch, 56; Gambel's Sparrow, 105; Shufeldt's Junco, 250; Merrill's Song Sparrow, 61; Western Tule Wren, 2; Long-tailed Chickadee, 1. Total, 21 species, 1,872 individuals.—Alex. Stalker.

Denver, Colo.—Dec. 25; 2.20 to 4 P.M. Partly cloudy; ground with some snow; wind west, strong; temp. 45° to 55°. Ring-necked Pheasant, 11; Marsh Hawk, 1; Orange-shafted Flicker, 9; Magpie, 75; Red-winged Blackbird, 750; Meadowlark, 4; House Finch, 35; Tree Sparrow, 60; Shufeldt's Junco, 3; Pink-sided Junco, 1; Gray-headed Junco, 18. Total, 11 species, 967 individuals.—W. H. Bergtold.

Mesa (vicinity), Maricopa Co., Ariz.—Dec. 21; 3 P.M. to dusk. Clear; ground bare; no wind; temp. 50°+. Killdeer, 25; Mourning Dove, 20; Turkey Vulture, 1; Desert Sparrow Hawk, 4; Gila Woodpecker, 4; Cassin's Kingbird, 4; Western Black Phœbe, 2;

Vemilion Flycatcher, 2; Sonoran Red-winged Blackbird, 100+; Texas Meadowlark, 50; House Finch, 2 males; Lawrence's Goldfinch, 6; Western Vesper Sparrow (?), 1; Gambel's Sparrow, 10; Western Chipping Sparrow, 25; White-rumped Shrike, 6; Audubon's (?) Warbler, 30; Palmer's Thrasher, 4; Bendire's Thrasher, 1; Cactus Wren, 5. Total, 20 species, 302 individuals.—James W. Lane, Jr.

Seattle, Wash. (To Interlaken, Union Bay Shores, South-shore of Lake Union, University grounds, Laurelhurst, thence to Mud Lake, Sandy-Point and Pontiac Bay, via Lake Washington shore, and return).—Dec. 24; 9. A.M. to 4.45 P.M. Cloudy, light showers to continuous rain; hail at 11.45 A.M.; ground bare; wind southeast, light, increasing in afternoon; temp. 38°. Western Grebe, 1; Pied-billed Grebe, 8; Western Gull, 9; Herring Gull, 12; California Gull, 1; Red-breasted Merganser, 2; Hooded Merganser, 3; Mallard, 18; Green-winged Teal, 3; Shoveler, 10; Pintail, 2; Canvasback, 3; Scaup, 40; Ring-necked Duck, 3; Bufflehead, 14; Old-squaw, 9; White-winged Scoter, 1; Ruddy Duck, 270; Northwestern Coast Heron, 2; Coot, 300; California Quail, 1; Bald Eagle, 1; Kingfisher, 1; Harris's Woodpecker, 2; Northwestern Flicker, 5; Western Crow, 20; Western Chipping Sparrow, 1; Oregon Junco, 3; Rusty Song Sparrow, 6; Western Winter Wren, 6; California Creeper, 1; Oregon Chickadee, 3; Bush-Tit, 12; Western Golden-crowned Kinglet, 6; Western Robin, 37; Varied Thrush, 45. Total, 36 species, 861 individuals.—F. W. Cook.

Portland, Ore.—Dec. 27; 10 A.M. to 4 P.M. Cloudy, light rain in afternoon; wind south; temp. 37° to 41°. Glaucous-winged Gull, 3; California Gull, 10; Canvasback, 68; Ring-necked Pheasant, 200; Cooper's Hawk, 1; Red-shafted Flicker, 3; Pine Siskin, 200; Oregon Junco, 60; Rusty Song Sparrow, 25; Oregon Towhee, 5; Vigors's Wren, 6; Western Winter Wren, 3; Oregon Chickadee, 11; Western Golden-crowned Kinglet, 15; Ruby-crowned Kinglet, 3; Western Robin, 1; Varied Thrush, 6. Total, 17 species, 432 individuals.—Tom McCamant, Jack Dougherty and William Brewater.

Escondido, Calif.—Dec. 25; 9 A.M. to 2 P.M. Partly cloudy; temp. 65°. Killdeer, 30; Valley Quail, 100; Mourning Dove, 20; Western Red-tailed Hawk, 1; Desert Sparrow Hawk, 2; Barn Owl, 2; Burrowing Owl, 3; California Screech Owl, 1; Red-shafted Flicker, 3; Black-chinned Hummingbird, 2; Arkansas Kingbird, 9; Say's Phœbe, 4; Black Phœbe, 2; California Jay, 4; Western Meadowlark, 75; Brewer's Blackbird, 150; House Finch, 200; Willow Goldfinch, 50; Anthony's Towhee, 25; Phainopepla, 1; California Shrike, 8; Audubon's Warbler, 30; Western Mockingbird, 10; Pasadena Thrasher, 3; California Bush-Tit, 20; Pallid Wren-Tit, 6; Western Robin, 25; Western Bluebird, 10. Total, 28 species, 805 individuals.—Fred Gallup.

Fresno, Calif.—Dec. 24; 12 M. to 4.30 P.M. Clear; no wind; temp. 62°. Fresno to Firebaugh and return by auto. Western Grebe, 1; California Gull, 30; White Pelican, 20; Mallard, 1; Snow Goose, 100; Great Blue Heron, 6; Coot, 79; Least Sandpiper, 17; Killdeer, 4; Western Mourning Dove, 12; Turkey Vulture, 4; Marsh Hawk, 6; Western Red-tailed Hawk, 10; Rough-legged Hawk, 3; Golden Eagle, 1; Prairie Falcon, 1; Desert Sparrow Hawk, 24; Burrowing Owl, 7; Kingfisher, 1; Red-shafted Flicker, 32; Say's Phœbe, 6; Black Phœbe, 7; California Horned Lark, 348; Western Crow, 2; Western Meadowlark, 194; Brewer's Blackbird, 162; House Finch, 132; Western Savannah Sparrow, 19; Western Lark Sparrow, 16; Gambel's Sparrow, 166; Western Chipping Sparrow, 1; California Sage Sparrow, 67; Heermann's Song Sparrow, 1; California Shrike, 67; Audubon's Warbler, 170; Pipit, 30; Western Mockingbird, 28; Tule Wren, 1; Western Bluebird, 5. Total, 40 species, 1,804 individuals.—Mr. and Mrs. John G. Tyler.

Los Angeles, Calif.—Dec. 26; 7.30 A.M. to 5 P.M. Clear; strong northwest wind in canyons and foothills; temp. 54° to 71°. Census taken by members of the Los Angeles Audubon Society, in 8 sections, visiting Mt. Lowe, Eagle Rock, Arroyo Seco, Griffith Park, Sycamore Grove, Silver Lake, Rosedale Cemetery and San Pedro, all within 10 miles of the city. Mt. Lowe was reached by cars, San Pedro and Griffith Park by auto.

the rest on foot. Eared Grebe, 2; Pied-billed Grebe, 7; Red-throated Loon, 1; Glaucous-winged Gull, 4; Western Gull, 26; California Gull, 637; Heermann's Gull, 55; Bonaparte's Gull, 31; Forster's Tern, 3; Least Tern, 7; Farallon Cormorant, 1; Brandt's Cormorant, 4; Baird's Cormorant, 1; California Brown Pelican, 16; Mallard, 2; Gadwall, 2; Baldpate, 31; Green-winged Teal, 3; Cinnamon Teal, 9; Shoveler, 4; Pintail, 9; Redhead, 1; Canvasback, 10; Scaup, 2; Lesser Scaup, 10; Goldeneye, 5; Bufflehead, 12; White-winged Scoter, 16; Ruddy Duck, 14; American Bittern, 1; Great Blue Heron, 2; Sandhill Crane, 1; Virginia Rail, 2; Sora, 4; Florida Gallinule, 5; Coot, 624; Northern Phalarope, 7; Wilson's Snipe, 14; Least Sandpiper, 2; Western Sandpiper, 1; Sanderling, 20; Marbled Godwit, 8; Greater Yellowlegs, 1; Spotted Sandpiper, 3; Hudsonian Curlew, 5; Killdeer, 65; Snowy Plover, 9; Turkey Vulture, 17; Valley Quail, 114; Western Mourning Dove, 5; Marsh Hawk, 1; Sharp-shinned Hawk, 2; Cooper's Hawk, 2; Desert Sparrow Hawk, 7; Barn Owl, 1; California Screech Owl, 2; Burrowing Owl, 2; Roadrunner, 1; Kingfisher, 2; Willow Woodpecker, 1; Red-breasted Sapsucker, 1; California Woodpecker, 4; Red-shafted Flicker, 39; Anna's Hummingbird, 40; Cassin's Kingbird, 4; Say's Phœbe, 9; Black Phœbe, 33; California Horned Lark, 300; Blue-fronted Jay, 5; California Jay, 38; Western Raven, 5; Western Crow, 21; San Diego Red-winged Blackbird, 1,006; Tricolored Blackbird, 84; Western Meadowlark, 169; Brewer's Blackbird, 1,246; California Purple Finch, 10; House Finch, 2,044; Willow Goldfinch, 63; Green-backed Goldfinch, 68; Western Savannah Sparrow, 16; Belding's Sparrow, 13; Large-billed Sparrow, 12; Western Lark Sparrow, 72; Gambel's Sparrow, 474; Golden-crowned Sparrow, 31; Western Chipping Sparrow, 4; Thurber's Junco, 44; Rufous-crowned Sparrow, 69; San Diego Song Sparrow, 83; Thick-billed Fox Sparrow, 2; Spurred Towhee, 33; Anthony's Towhee, 83; Tree Swallow, 1; Cedar Waxwing, 50; California Shrike, 34; Hutton's Vireo, 6; Dusky Warbler, 2; Western Yellow Warbler, 1; Myrtle Warbler, 1; Audubon's Warbler, 515; Pacific Yellowthroat, 5; Pipit, 41; Western Mockingbird, 82; Pasadena Thrasher, 1; Rock Wren, 8; San Diego Wren, 9; Tule Wren, 5; Sierra Creeper, 2; Slender-billed Nuthatch, 4; Plain Titmouse, 13; Mountain Chickadee, 20; California Bush-Tit, 208; Wren-Tit, 19; Ruby-crowned Kinglet, 45; Western Gnatcatcher, 13; Dwarf Hermit Thrush, 18; Western Robin, 37; Varied Thrush, 1; San Pedro Bluebird, 3; Mountain Bluebird, 6. Total, 121 species, 9,131 individuals.—Mrs. Robert Fargo; Miss Helen S. Pratt; Mrs. Harriet Williams Myres; Mrs. F. T. Bicknell and Mrs. C. H. Hall; Mr. John Frederick; Mrs. Anna Gurney and Dr. E. A. Dial; Mrs. S. A. Williams; Mr. Alfred Cookman.

San Francisco, Calif. (Golden Gate Park).—Dec. 26; 9 A.M. to 5 P.M. Clear; high wind, mist in morning; temp. 55° to 58°. Pied-billed Grebe, 10; Mallard, 339; Baldpate, 20; Green-winged Teal, 2; Shoveler, 122; Pintail, 8; Lesser Scaup, 62; Bufflehead, 8; Ruddy Duck, 126; American Coot, 732; Killdeer, 3; Valley Quail, 200; Kingfisher, 1; Red-shafted Flicker, 2; Anna's Hummingbird, 14; Black Phœbe, 9; California Jay, 2; Brewer's Blackbird, 30; Bicolored Blackbird, 2; Gambel's and Nuttall's Sparrows, 400; Golden-crowned Sparrow, 1; Oregon Junco, 15; Santa Cruz Song Sparrow, 150; Townsend's Sparrow, 7; Spurred Towhee, 5; Hutton's Vireo, 5; Audubon's Warbler, 68; Pacific Yellowthroat, 8; American Pipit, 2; Vigors's Wren, 3; California Chickadee, 8; Bush-Tit, 24; Alaska Hermit Thrush, 12; Western Robin, 64; Varied Thrush, 8. Total, 35 species, 2,472 individuals.—C. R. Thomas, C. Coburn and Harold E. Hanson.

Santa Barbara, Cal.—Dec. 27; 6.30 A.M. to 5 P.M. Clear; crisp; no wind; min. temp. 40°. Western Grebe, 17; Eared Grebe, 4; Glaucous Gull, 1; Glaucous-winged Gull, 8; Western Gull, 200; Herring Gull, 2; California Gull, 53; Ring-billed Gull, 10; Short-billed Gull, 6; Heermann's Gull, 60; Bonaparte's Gull, 600; Royal Tern, 6; Farallon Cormorant, 200; Brandt's Cormorant, 30; Baird's Cormorant, 2; California Brown Pelican, 12; Baldpate, 4; Green-winged Teal, 200; Cinnamon Teal, 4; Shoveler, 2,500; Pintail, 2,000; Canvasback, 200; Lesser Scaup, 4; Bufflehead, 5; White-winged Scoter,

20; Surf Scoter, 60; Ruddy Duck, 200; Bittern, 5; Great Blue Heron, 14; Black-crowned Night Heron, 20; Light-footed Rail, 1; Sora, 1; Coot, 400; Wilson's Snipe, 1; Least Sandpiper, 8; Sanderling, 1; Marbled Godwit, 1; Killdeer, 30; Snowy Plover, 50; Valley Quail, 80; Mourning Dove, 2; Turkey Vulture, 10; Western Red-tailed Hawk, 2; Red-bellied Hawk, 1; Desert Sparrow Hawk, 8; California Screech Owl, 3; Roadrunner, 1; California Woodpecker, 20; Red-shafted Flicker, 10; White-throated Swift, 40; Anna's Hummingbird, 50; Say's Phœbe, 40; Black Phœbe, 12; California Horned Lark, 200; California Jay, 20; San Diego Red-winged Blackbird, 400; Western Meadowlark, 90; Brewer's Blackbird, 600; California Purple Finch, 6; House Finch, 2,000; Willow Goldfinch, 3; Green-backed Goldfinch, 70; Pine Siskin, 1; Bryant's Marsh Sparrow, 3; Belding's Sparrow, 15; Large-billed Sparrow, 1; Western Lark Sparrow, 20; Gambel's Sparrow, 200; Nuttall's Sparrow, 40; Golden-crowned Sparrow, 300; Western Chipping Sparrow, 40; Sierra Junco, 20; Rufous-crowned Sparrow, 2; San Diego Song Sparrow, 40; Lincoln's Sparrow, 1; Valdez Fox Sparrow, 6; Spurred Towhee, 6; Anthony's Towhee, 60; Tree Swallow, 60; California Shrike, 10; Hutton's Vireo, 2; Dusky Warbler, 4; Myrtle Warbler, 1; Audubon's Warbler, 300; Tule Yellowthroat, 6; Pipit, 400; Western Mockingbird, 4; California Thrasher, 4; Rock Wren, 1; Dotted Canyon Wren, 1; San Diego Wren, 5; Western House Wren, 4; Tule Wren, 10; San Diego (Plain) Titmouse, 4; Bush-Tit, 100; Pallid Wren-Tit, 12; Western Ruby-crowned Kinglet, 60; Western Gnatcatcher, 12; Dwarf Hermit Thrush, 300; Western Robin, 200; Northern Varied Thrush, 3; Western Bluebird, 10. Total, 102 species, 12,865 individuals. The following species not seen on the 27th were found on the trials of Dec. 23 and 24: Pied-billed Grebe, Pacific Loon, Red-breasted Merganser, Hutchins's Goose, Long-billed Curlew, Black-bellied Plover, Duck Hawk, Barn Owl, Burrowing Owl, Western Savannah Sparrow, White-throated Sparrow, Thick-billed Fox Sparrow, Black-headed Grosbeak (one young male repeatedly seen), Cedar Waxwing. A total of 116 species for the Christmas cycle.—William Leon Dawson and William Oberlin Dawson.

Book News and Reviews

British Birds. Written and Illustrated by A. Thorburn, F.Z.S. With eighty plates in colors, showing over four hundred species. In four volumes. Vol. II. Longmans, Green & Co., London and New York. 1915. 4to pages, vi + 72; plates, 21–40.

All that we said in reviewing* the first volume of this superb work applies with equal truth to volume two. The twenty plates it includes figure the Crows, Larks, Picariæ (Swifts, Woodpeckers, Cuckoos, etc.), Owls, Hawks, Cormorant, Gannet, and Herons. Mr. Thorburn again demonstrates his skill in grouping a number of not closely related species on the same plate and, where circumstances permit of the inclusion of but a single species on a plate and consequent greater breadth of treatment, he gives us a masterly exhibition of his art; as, for example, in the plates of the Golden Eagle and Eagle Owl.

The remaining two of the four volumes which complete, this monograph are promised for 1916.—F. M. C.

How to Attract Wild Birds About the Home. By Neil Morrow Ladd, President of the Greenwich Bird Protective Society, Inc. With an Introduction by Charles D. Lanier. To which is added the First Annual Report of the Greenwich, Conn., Bird Protective Society. 8vo. 68 pages, 40 illustrations, mostly from photographs taken by the author. Price, 35 cents.

This publication is worthy of rank with the reports of the Meriden and Brush Hill Bird Clubs. It contains much practical information in regard to the ways and means of attracting and protecting birds and of conducting bird clubs, and it contains also a record of what may be accomplished by well-directed, persistent efforts to arouse the residents of any community to an appreciation of the beauty and usefulness of birds.

Everyone interested in the problems of local bird clubs will do well to get a copy of Mr. Ladd's attractive booklet.—F. M. C.

*Bird-Lore, XVII, July-August, 1915, p. 294.

The Ornithological Magazines

The Condor.—The half-dozen general papers in the October number of 'The Condor' are unusually varied in character. In a delightful description of 'Characteristic Birds of the Dakota Prairies,' Mrs. Florence Merriam Bailey gives an account of the short-eared Owl, the Prairie Chicken, Sharp-tailed Grouse, Longspur, Lark Bunting, and other species found 'in the open grassland.' An extinct 'Walking Eagle from Rancho La Brea, California,' is described by Loye Holmes Miller under the name *Morphnus daggetti*. This remarkable 'Eagle on stilts' had a tarsus as long as that of the Great Blue Heron, and in some respects evidently resembled the Secretary Bird of South Africa.

Two of the shorter papers read before the A. O. U. Congress on the Herring Gull and the California Woodpecker are published in full. In discussing the 'Estimated Average Age of the Herring Gull' from data collected in New York Harbor, Nichols reaches the conclusion that there is a very heavy mortality in birds between the first and second winters, and that the average age of those which survive the first season is 16.2 years. In 'A Late Nesting Record for the California Woodpecker,' Mrs. Myers mentions two broods of young found at Los Angeles, one on September 11, and the other on October 19.

Dr. L. B. Bishop contributes critical notes on 13 species of California birds, and describes the Dwarf Savannah Sparrow resident in southwestern British Columbia as a new sub-species under the name *Passerculus sandwichensis brooksi*, based on a specimen collected at Chilliwack, B. C., by Allan C. Brooks.

'A Partial List of the Summer Resident Land Birds of Monterey County, California,' is given by Pemberton and Carriger from notes made on two trips in December 1903 and May 1909. It contains notes on 100 species, and is illustrated by

a map and five halftones. Unfortunately, the species are not arranged according to the check list, which makes it difficult to find some of the notes, and puts the English Sparrow at the end of the list in the anomalous position of appearing as the highest type of bird found in Monterey County. It is always a mistake to depart from the accepted sequence of species in a local list, in order to show relationship, when classification forms no part of the subject of the paper.

Among the shorter notes is a brief but interesting account of 'Bird Study Out-of-doors in European Schools,' which claims that nature-study field excursions in Europe are far in advance of those in America. In an open letter, W. Leon Dawson outlines the principles on which he believes permits should be issued for collecting birds and eggs for scientific purposes.—T. S. P.

The Oriole—'The Oriole' for August, 1915, is the second and concluding number of this volume of the Somerset Hills Bird Club of Bernardsville, New Jersey. It contains articles on 'Color' and 'A Glimpse of Egyptian Bird-Life,' by C. William Beebe, 'Some Notes from Morristown, N. J.,' by Maunsell Schieffelin Crosby, 'Birds of a Garden in Columbia, S. C.,' by Belle Williams, and a number of 'Decoration Day Censuses' from northern New Jersey. The average number of species given in eight censuses is fifty-seven, the largest, seventy-two, this being the number observed by Charles H. Rogers, on May 31, from 5.20 A.M. to 9.05 P.M., in the region about Plainfield. The Editor, Mr. John Dryden Kuser, writes at length on the ethics of bird protection. He admits the right of the sportsman to kill birds for pleasure under "a reasonable regulation of killing, so that it may be kept down to a basis where the game continues to be preserved and is not decreased," but deplores the collecting of birds by amateurs for preservation and study. But has not the student equal rights with the sportsman and, pleasure aside, is it not more defensible to shoot a bird for the cabinet than for the table? Furthermore, since the student takes his toll from the entire avifauna rather than a very limited part of it, and his wants, once filled, are not recurrent with the opening of every shooting season, why is he not less destructive than the sportsman? We know of no instance in this country where the numbers of a species have been appreciably affected by purely amateur collecting; and where such collecting is done with a definite end in view, and not merely for the purpose of acquisition, it should be permitted by law Indiscriminate collecting should be discouraged, not so much because of the birds taken,—they will be preserved, not destroyed,—but because, in the greater part of our country, it is a waste of time on the part of the collector. He can employ his opportunities for field work to much better advantage in studying birds rather than in shooting them.—F. M. C.

Book News

The Smithsonian Institution has paid Mr. Fuertes a well-deserved compliment in asking permission to republish his series of 'Impressions of the Voices of Tropical Birds' which appeared in Bird-Lore for 1914.

'The Guide to Nature' has established a department of Ornithology, under the editorship of Harry G. Higbee, which adds materially to the value of that well-conducted magazine.

The Proceedings of the Colorado Museum of Natural History (Denver), published under date of December 6, 1915, a twelve-page list of 'The Birds of Yuma County, Colorado,' by F. C. Lincoln. It enumerates 160 species, and is briefly annotated with reference to their comparative numbers and times of occurrence.

In the 'Sixteenth Report of the Michigan Academy of Sciences' (pp. 74–91), Frederick M. Gaige publishes an annotated list of eighty-eight species of birds observed in Dickinson County, Michigan, during the summer of 1909. It is prefaced by a description of the 'Habitats and Habitat Distribution of the Species,' and contains much information of value to the Zoögeographer.

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Bird-Lore's Motto:
A Bird in the Bush Is Worth Two in the Hand

THE lives of three great ornithologists have ended on or near Christmas Day. Elliot Coues died December 25, 1899; Bowdler Sharpe, head of the Department of Birds of the British Museum, died December 25, 1899; and on December 22, 1915, American ornithology lost its dean in the death of Daniel Giraud Elliot.

Dr. Elliot was the last link connecting us with what Dr. Coues termed the Cassinian Period, which extended from the year 1853 to 1858. For over fifty years he pursued his studies of birds, and more recently of mammals, and the mere enumeration of the titles of his great monographs and special papers would fill pages of BIRD-LORE. These he has left behind him, a lasting record of his industry. But, in paying this brief tribute to Dr. Elliot's memory, it is not our object to dwell on what he accomplished. Rather would we seek in his life the origin of that inspiration which, with compelling force, urged him from one task to another, all undertaken with no hope of material reward, but for the love of work for work's sake and for the pure, exalted joy of achievement.

In 1850 odd, when Dr. Elliot began his studies of birds, there were but few people in this country who shared his tastes. There were no Bird Clubs, no Audubon Societies, no American Ornithologists' Union, and no museum in the city in which he resided. Nevertheless in spite of these unfavorable surroundings, the germ of the naturalist within him steadily developed. Ere long, like Audubon, he journeyed to England to further the publication of his monographs, and also to avail himself of the greater facilities for investigation which at that time the Old World offered.

From this period until his final illness, his interests in his chosen subjects and the pleasure he derived from his studies showed no abatement. His last work, a monograph of the Primates, in three large quarto volumes, completed in 1912, was his greatest work, both in size and scientific importance. While engaged in its preparation at the American Museum of Natural History, he was among the first of the scientific staff to arrive, and with only a few minutes' pause for luncheon, he applied himself continuously to the painstaking labor of compilation of synonomy, describing of specimens, and making of 'keys.' He seemed never to tire, either in body or mind, but stuck persistently at whatever task he had in hand until it was completed.

Dr. Elliot was in his seventy-eighth year when the monograph of the Primates was completed. At that age most men, even those who retain an exceptional measure of health and vigor, are apt to consider their life-work as ended. Few of their early associates remain; the past is closed, the future holds no promise, and the days, devoid of either duty or pleasure, drag wearily along.

But those who were privileged to know Dr. Elliot in the final years of his life never thought of him as old. His mind was as young, his interest as keen, as those of men who could count but half his years.

Associates, therefore, he never lacked, for community of interests constantly brought him fresh ones. Occupation never was wanting, for there were always fresh fields to conquer, and it was not a question of *what* he should do, but *which* of many inviting problems he should select. Here, then, is the lesson of Dr. Elliot's life: that in his love of nature and study of her manifold forms he discovered the secret of perpetual youth.

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the Editor, 67 Oriole Avenue, Providence, R. I.

A PRACTICAL GARDEN CLASS

In the last issue of BIRD-LORE a brief description of a very successful Audubon exhibit at a food fair was given, as an illustration of practical methods of bringing the public into touch with bird welfare.

A more lasting and therefore more valuable method has been worked out by a garden class in Lyndon, Vermont, whose annual exhibition attracted wide interest last fall. To quote from the county paper may give in more vivid form the impression which the average visitor on that occasion had:

"Monday was a great day for the busy workers of the Lyndon garden class. The big demonstration of the results of their industry shows how the garden class grows. It is a veritable modern instance of Jack's bean-stalk, for this was only the third annual exhibition, and yet it was attended by hundreds of interested people, addressed by the state's most distinguished public men, and participated in by scores of thrifty children, who have been taught to take pride and pleasure in their work, and have learned the real value of it and its important part in the modern scheme of community life.

"The fair was held on the green at the Lyndon tea-shop, and the splendid display of vegetables, fruits and animals represented over a hundred school gardens in which nearly twice that number of children have been directly interested the past season, and have great reason to be proud of the fine showing made at the fair.

"There was a fine display of poultry, calves, ponies, pigs, sheep, and a big line of pens containing pets of all kinds, including cats, dogs, rabbits, guinea-pigs, chipmunks, coons, and even foxes.

"The tables, sixty of them, were spread with a tempting array of vegetables and flowers. There was a fine exhibit of bread, cake and cookies, butter and cheese, school lunches, an interesting display of woods and seeds, and the policing of the grounds was successfully accomplished by a score of scarecrows, as lifelike as they were grotesque and effective.

"Several tables were devoted to an exhibition of drawings, including drafting plans, pen-work, sketches and cartoons.

"A pavilion was filled with a tempting array of canned goods, including jellies, fruits and vegetables, and an interesting part of the day's program was a demonstration of canning of fruits and vegetables.

"One of the most attractive exhibits was the long table trimmed with maple

leaves, and showing forty-three separate exhibits of maple sugar in five pound pails, prepared by the young people of the garden class last spring.

"Much interest was shown in the parade which opened the afternoon's program. This was followed by the running races and the speaking by prominent people present.

"We have purposely omitted all names of the individual exhibitors. There were several hundred of them, and the display each one offered was well worth a

LYNDON GARDEN CLASS DEMONSTRATION LESSON

prize. The list of the actual prize winners will be in shape to be made public next week. In the meantime, every exhibitor should realize that to show as good results as were there demonstrated is a prize in itself well worth striving for and no one should be disappointed."

The speakers of the day were a Congressman and Senator of Vermont and the Secretary of the Greater Vermont Association, all of whom made a direct appeal to the large audience present, comprised of the garden class, with parents and guests, to further the splendid work of the children in the interests not only of the state but also of the individual, inasmuch as the efforts of the class betokened both practical and cultural values of great moment to the development of the community.

The class represents most of the families in the farming section of Lyndon, outside of the village proper, and is conducted by a trained instructor, whose duty it is to visit the gardens regularly, to arrange special work, and to take charge of exhibitions. She writes: "The aim of our undertaking is to awaken interest in *the doing* of all the work that fathers and mothers have to do in the home, getting the children to do their share, thus instilling lessons of their responsibility in the upkeep and care of the home, and helping them to get all the pleasure there is in developing home resources, so that, as they grow

older, their interest in the home and the community will be so great that they will see it is to their advantage to 'Stay on the farm.' "

One particularly good exhibit, done by a boy nine years old, was of native woods and their uses, as shown in the following schedule, which, for lack of space, is given only in part. This boy cut the specimens of wood used in the exhibit on his home farm, getting up before breakfast to do the work. Being a bird-lover, trees have a double attraction for him.

USE OF WOODS BY SPECIES

CARL SIMPSON (age 9 years)

1. Pine

blinds	dairy goods	sash	finish
butter-box	crates	window-screens	sheathing
kitchen cabinets	doors	frames	silos
molding	refrigerators		

2. Fir

boxes	doors	sash	wagon-bodies
blinds	finish	sheathing	fruit-crates

3. Hemlock

boxes	churns	sheathing	silos
butter-tubs	ceiling	siding	fruit-crates
doors	packing-cases		

4. Spruce

boxes	ceiling	packing-cases	silos
butter-tubs	fruit-crates	agricultural implements	sheathing
churns	flooring		doors

HERB GARDEN, GROWN BY REVILLO WETHERBEE (AGED 10 YEARS)

5. Cedar

shingles water-tanks taxidermist heads posts
rustic chairs

6. Maple

baskets	crating	parlor frames	spools
blinds	croquet sets	piano-backs	tables
bobbins	cattle stanchions	rolling-pins	brush-handles
boxes	broom-handles	screens	school desks
car ceiling	flooring	sleds	window-screens
chairs	finish	wagons	refrigerators
clothes-pins	novelties	spokes	agricultural implements

7. Yellow Birch
8. Beech
9. White Ash
10. Brown Ash
11. Poplar
12. Basswood
13. Black Cherry
14. Elm
15. Butternut
16. Tamarack
17. Willow
18. Aspen

JUNIOR AUDUBON WORK

For Teachers and Pupils

Exercise XXV. Correlated Studies: Reading and Drawing. Feathers, Part II

Continuing our study of a bird's plumage, let us devote attention in this exercise to the coloring and markings of feathers. As we have already seen, feathers differ in structure according to their location and use. They differ also in color and pattern according to their location and wear, for feathers, like clothes, may fade and become frayed and worn.

The first thing that the average observer notices about the plumage of birds is, probably, the great variety of colors and markings apparent to the eye. The rich glossy browns and blacks, brilliant blues, reds and yellows, delicate flushes of color on somberly garbed birds, iridescent tints, combined with an innumerable variety of markings, at once confuse and entrance the eye. It is small wonder that, to beginners, the plumage of birds seems to be their most important field character. How superficial this view is, however, may be seen at once by inspecting a few separate feathers, especially, of highly colored species. A yellow bird is found to have feathers the tips of which alone are yellow, and so, of red or blue or even black birds, if the feathers are contour feathers. Quill- and tail-feathers may be colored throughout.

Markings, also, are found to be mostly confined to exposed surfaces, as if Nature were economizing by using only sufficient coloring-matter (pigment) to make a show where it can be seen. One would scarcely believe, if told that a feather gray-white or white, except at its tip, belonged to a red or yellow or

black bird, as the case might be, that so faint a display of color or of markings could produce so brilliant an effect, combined with similar feathers in sufficient quantity.

By observing carefully, anyone can detect another fact about feathers, namely, that they are not all colored in the same way. Some feathers show the same color in any light, others change from one shade to another. Some colors are dull and some are metallic and glistening. Some show rainbow hues and others only one. It is a good test of one's powers of observation to give examples of these different colorings, just as it is of advantage to be able to give examples of the different markings on different birds.

An especially good winter exercise is a review of the common birds by families, in the order arranged by the American Ornithologists' Union, with this one point of the color and markings of plumage in mind.

Coming back to the matter of the different ways in which feathers are colored or may appear to be colored, we find ourselves confronted by a somewhat complicated subject. It is of little use, however, to pass over a point or to give up trying to understand it because it seems difficult, and so let us at least learn the fact that there are different ways of producing color-effects in the plumage of birds, as well as elsewhere.

The three most general color-effects are:

1. Those due to coloring-matter (pigment) in the feather itself.

Black, red, yellow, brown and some shades of green are examples of these color-effects. Brown is a combination of red and black coloring-matter. In pigeons, yellow has been found to be red in dilute quantity. White is not a color, but the result of a lack of coloring-matter.

The colors in this list *always show the same* in any light.

2. Those due to the effect of light on the surface of feathers which contain coloring-matter, with especial references to the way in which the coloring-matter is distributed.

In this list belong all shades of blue, nearly all shades of green, and a few shades of yellow. It is a curious fact that, although there are birds blue as the sky and others blue as indigo, no blue coloring-matter has been found in their feathers. Either brown or black is the basis of blue color. Feathers with smooth surfaces give a glossy color-effect.

3. Those due to light-effects on the surface of feathers with less reference to coloring-matter than to the form and arrangement of the different parts of the feather.

We learned in the last exercise, that a feather is made up of many parts, and that its smooth, even vane can be pulled apart into tiny barbs, barbules, and barbicels. Not all feathers, however, have barbicels, and not all have the barbules arranged in the same way so that the surface of the vanes of all feathers may be seen to differ a great deal, if looked at under a microscope. This may be illustrated by holding first a perfectly flat, smooth glass up to the light and then a prismatic glass. The color-effects produced will be quite

different. Similarly but not in exactly the same way the color-effects on the surfaces of smooth or peculiarly grooved feathers will be different. Rainbow colors, or iridescence, are produced by light on some feathers of the latter description. We are all familiar with the gleaming, scintillating plumage of the Hummingbird, or the iridescent colors of the common Grackle. Only the tips of metallic feathers show color, and these show it only on the upper side. The laws explaining this strange action of light on feathers are found in the study of physics. They do not belong to elementary bird-study, but for all who go out in the field to observe birds it is not unimportant to have an inkling of these few facts about the coloring of feathers.

A great variety of patterns as well as of colors is characteristic of feathers. Comparatively few birds or species of birds have plain feathers. Markings may be regular, forming a sort of pattern, as on the head of the Woodcock or the breast of the Flicker, or they may be confined to a few feathers, forming wing-bars, tail-spots, patches or bands on the breast or elsewhere. How they are changed by wear will be referred to in the next exercise. Much study has been devoted to the colors and patterns of feathers. It is known that some birds are protected by their plumage, inasmuch as the color and pattern of their feathers blend so perfectly with the immediate vicinity of their feeding- and nesting-areas that they are practically invisible when quiet. If an enemy appears, their surest means of defence is to keep still until actually flushed.

Just how important protective coloration is to birds in general is not known, but it seems to be true that species like the Ruffed Grouse or Whip-poor-will, for example, are far more invisible to the ordinary observer than highly colored species like the Scarlet Tanager.

There is still another fact of much interest about the color of feathers, that is, unnatural, or what is better known as abnormal color. Normal color, as we know, is what is regularly found in healthy birds that feed on a regular diet. Abnormal color is found oftentimes in unhealthy birds or in those that are fed on a peculiar diet. It is not uncommon to find caged birds showing unnatural or abnormal colors. Red canaries may be reared on a certain diet. Sometimes birds that ordinarily are green or orange or quite red look almost wholly yellow; but this is an abnormal condition. Occasionally, one hears of a white Crow, or a white Robin. Such birds, for other reasons, have no coloring-matter in their feathers. More rarely one hears of a black Sparrow or an almost black Blue Jay, and this is the result of too much coloring-matter in the feathers. Changes in climate also affect the plumage of certain species.

Feathers, we learn, therefore, are not only complicated in structure, but their colors and markings are very diverse. Natural or normal coloration is due to three causes: first, coloring-matter; second, coloring-matter and structure with reference to light; and, third, structure alone with reference to light. The colors and patterns of feathers may sometimes serve to protect a bird when it is still, but not all birds are protectively colored and marked.

Birds, through lack of normal health or diet, or through changes in climate, may for a time show striking peculiarities in the color of their plumage, or through wear and constant use, in the markings of their plumage. Why birds need to change their feathers, and when they do it, will be the subject of the next exercise, and differences in colors and markings due to sex will be described.

REFERENCE

Chapman: Handbook of Birds of Eastern North America, pp. 87–97.

FOR AND FROM ADULT AND YOUNG OBSERVERS

AN INTERESTING TRIP

I took such an interesting trip today (Dec. 20, 1910) that I think it should be recorded.

At the northeastern foot of Weionkhiege Hill a small stream flows, dancing over huge blocks of granite gneiss through a clump of spruce. A small dam has made a little pool in this grove, and the sun shone in from a southern exposure, melting the ice and giving a touch of spring to the air, fragrant with the smell of spruce.

This little grove was fairly teeming with bird life. As I approached it, four Crows flew cawing from the trees to a nearby fence, and a Blue Jay lent a beautiful touch of color, while he sounded his discordant alarm. I moved quietly into the little haven, and sat down to eat lunch.

Soon the birds were moving again. The Blue Jay sneaked back, with an occasional question, to peer out from behind a branch. A Chickadee began again his busy search for food. He forgot all about me, and went through his beautiful gymnastics within ten feet of me on the graceful twigs of a birch. Several Brown Creepers twittered while they searched the spruce branches for insects' eggs or belated millers. A flock of Kinglets flew from a tree-top and lost themselves in another. Somewhere in the gloom of the grove a Downy Woodpecker squeaked, as he rapped on a dead branch in search of borers, and I turned in time to see an audacious red squirrel scamper away with a bread crust that I had thrown to one side.

When I had finished my lunch and my day dreams, I stood up and stooped for my specimen bag. A flutter and whirr of wings startled me, and I looked to see the flash of brown wings and a broad spread fantail disappear through low-hung green branches. It told the story of a Grouse disturbed from his noon-day sunning, where he had moved when all was quiet.

A closer examination of the snow revealed more wonders, the tracks where a mouse had run under a bough; four close-set holes in the snow, where a mink had left the brook for a refuge under a rock-shelf; many rabbit tracks, showing where a game of tag had been played, and a succession of wild leaps followed by fox tracks, revealing the story of its interruption, while the clear-cut,

pointed hoof-marks of a deer proved that all wildness had not left the spot.

I left this paradise, feeling the deep sense of reverence that close contact with Nature always brings.

Wishing you a Merry Christmas and a Happy New Year. A fellow bird-lover.—Israel R. Sheldon.

[So sincere an observation should make us all wish to be *true Nature-lovers*. It is easy to awaken enthusiasm in the spring, and to continue outdoor observations during the summer and fall, but only true Nature-lovers are found in the open after the advent of snow and frost.

Mr. Sheldon's Christmas bird census in 1910 was taken in two places, and will be of value as a basis of comparison with those sent in this season from Rhode Island. It is as follows: Point Judith, R. I., Bobwhite, 8; Dusky Duck, 8; Widgeon, 2; Golden-eye, many; Greater Scaup, many; Loon, 4; Crow, 4; Titlark, many; Meadowlark, 3; Shore Lark, many; Herring Gull, many; Fox Sparrow, 3; English Sparrow, many; Large Hawk, 1; Goose, 2. Pawtuxet, R. I., Sparrow Hawk, 1; Meadowlark, 2; Robin, 1; Goldfinch, many; White-tailed Sparrow, 2; Bufflehead, 8; Golden-eye, many; Lesser Scaup, 2; Greater Scaup, many; Herring Gull, many; Chickadee, 4; Nuthatch (presumably White-breasted), 2; Hairy Woodpecker, 1; Downy Woodpecker, 2; Blue Jay, 6; Flicker, 3; Crow, many; English Sparrow, many.—A. H. W.]

EXPERIMENTS AND RESULTS

Last winter I got some suet and put it up in the cherry tree for the birds. A Downy Woodpecker discovered it first.

Every day I put out crumbs on the lawn and in a box which was nailed up in the tree. When the ground was frozen, I put out crumbs on the lawn, and a great many Sparrows came. Sometimes there were as many as thirty at once. Last year a family that lives near me put up bird-houses, and Bluebirds lived there all summer.

My father said he would put up a bird-house for me. Now I put out strings for the birds' nests. I haven't any cats, so the birds can live peacefully around my house.—Lillian Hyam (aged 12), *Beverly, Mass.*

[Attracting birds to one's home is always more or less of an experiment. During the latter days of November, the writer was surprised to see two Flickers attempting to sip water off the top of a sunken gas-pipe which had a flat iron cover, a contrivance for holding a clothes-post. The first Flicker that made the attempt was evidently more or less suspicious of this novel drinking-fountain, but succeeded in quenching its thirst. The second Flicker, possibly more timid, did not make the trial many times, but it is likely that the scanty supply of moisture on the iron cover had already been exhausted by its mate or companion. This incident happened on the back lawn of a new residence, and is perhaps worthy of notice, because it shows how easily the Flicker is attracted to pipes, eave-spouts and the like. No other birds have been observed investigating the post socket, although several different species frequent the trees about the place.—A. H. W.]

BIRDS AT SCHOOL

I think it would be very nice to get the birds coming around the school-yard, and especially about such a large school as ours. We have seen that of all the birds on the list, the Sparrow (English) is not among them. I guess the reason is that these Sparrows fight with other birds. Although they do fight, I have a great deal to do with them in the winter, especially when they blow off the trees. One day, as I was walking along the street, I saw a small Sparrow diving right down into the snow-bank, and it never came up, so I went over to see if it was alive, but it was frozen.

We have not started to make the boxes, but I think there is a girl's brother coming to make shelves, and this will be very nice for the poor birds.

I think we will succeed in getting our photographs taken, especially if we are able to tie suet to the trees and put the boxes up on shelves. We have been doing a lot of painting of the birds and every Friday we take a half-hour reading about them. Each girl reads one paragraph. We are enjoying this very much. We enjoy having Miss M. read your letters to us, so we planned to write you a short composition about our work.—Amy Diamond, *Douglass Street, Charlotteton, P. E. I.*

[If attracting birds to one's home is delightful, how much more so is it to attract them to schools! Birds are such companionable creatures that it is very easy to make and keep their acquaintance. What wonderful schools and scholars we might have if each school building could be situated in a Bird Sanctuary!—A. H. W.] See Bird-Lore Vol. XVII, No. 4, pp. 263–273.

MY FEATHERED FRIEND

One day as I was sitting on the lawn, I was wishing I could see a White-breasted Nuthatch, as I have only been seeing House Sparrows and Slate-colored Juncos.

I had just put my Christmas tree out on the lawn for the birds, with lettuce, wheat, oats, some wasted canary seed, celery, and apples. I then took several steps backward, to see if the birds would go to the tree and eat. As I took my seat, I heard a tiny, shrill nasal *auk-auk*, and to my great joy and surprise I saw a male and female White-breasted Nuthatch. I ran quickly for my field-glasses, so I could see them more plainly. All at once the mother bird disappeared and left the father still with me. As he was coming down the tree trunk, he stopped a minute and peered into my glasses so cunningly I wish you could have seen him. He is slate-colored on back and wings, and black on top of the head; the female is grayish on top of head. He has white cheeks and breast and a very long bill. This was 4.20 P.M. Thursday, December 31, 1914.

The next day I went out to see if my little friend was still around. At first I did not see him, but after calling his notes about five times I heard him repeat after me. It was my little friend, who was coming down the walnut tree trunk, head downward.

I watched him for a long time and repeated his notes after him. Soon I was called, and had to go in and leave my little friend picking away on the walnut tree. Saturday, January 2, 1915, when I went out I could not see him, but I feel sure he will come back soon and get some peanuts and suet.—SARAH WALDREN WEAVER, *Clynmalira, Glencoe, Baltimore, Md.*

[The writer of this interesting experiment in attracting birds about the home is a "little girl of the age of eleven years." She writes: "I love birds and have a bird-club to protect the birds. My club's name is the '*Protectors of Feathered Friends.*' We have a meeting once a month to study the birds. I hope to be a naturalist when I grow up." Here again is the spirit of the true Nature-lover.—A. H. W.]

AN ACKNOWLEDGMENT OF A PETER PAN BIRD STAND

The School Department wishes to acknowledge the gift of a simple but very useful device for feeding or giving water to birds. To a Bessemer steel rod is attached a cup which is securely riveted to the rod, the entire device being painted waterproof green. The essential features of this stand are the convenience with which it may be moved from place to place, the absence of any complicated mechanism and its durability. For further particulars, send to C. M. Perry, Ridgefield, Connecticut.

SNOWBOUND BIRD-HOUSES
Photographed by H. Findlay

THE SHOVELLER

By T. GILBERT PEARSON

The National Association of Audubon Societies

EDUCATIONAL LEAFLET NO. 84

The most characteristic feature of the Shoveller is its great bill, which measures about two and a half inches long and nearly one and a quarter inches in width. Spoonbill is the name by which this duck is known to many gunners; other names are Swabble-bill, Shovel-bill, and Cow-frog. Despite its large bill, which seems entirely out of all proportion to the size of the bird, the male Shoveller is a particularly beautiful Duck, and because of its striking green head and reddish belly it is sometimes mistaken for a male Mallard. The female, although she has an equally large bill, is not adorned with the bright plumage of her mate—in fact it is a common characteristic among water-fowl that the female wears a more somber plumage than does the drake.

Throughout the eastern and central United States Shovellers are rarely seen in summer. They begin to arrive from the North upon the approach of cold weather, usually among the first Ducks to appear, and frequently are found in company with Teals or Pintails. To see them one should go to such fresh-water or brackish-water marshes as are common along the Atlantic Coast from Maryland southward. In the lower Mississippi Valley, Shovellers are very plentiful, and they occur also in large numbers at many places on the Pacific Coast. Some individuals go as far south as Central America.

The student does not progress far in the study of wildfowl before he discovers that the family *Anatidæ* is divided into five subfamilies, one of which is known as "River and Pond Ducks." To this group belong the Mallard, Black Duck, Pintail, Gadwall, Widgeon, Shoveller, and our three American Teals. They are grouped together under this title because of their habit of feeding in the shallow backwaters of rivers, ponds, and lakes, and in marshes. The "Bay and Sea Ducks," which constitute another subfamily, are usually found in deep water, and frequently dive many yards for their food.

If you slip up to a Shoveller while he is getting his breakfast, you will find him dabbling in water usually but a few inches deep. Here he will skim the surface, catching such insects and larvæ as may happen to be floating by; and from the mud he will collect seeds and such edible animal-matter, as crustaceans, and some mollusks. Sometimes the bird will "tip up" while feeding. In this way it can reach downward several inches, when only the rear end of the body will remain in sight, the tail pointing directly upward. While thus engaged a flock of Spoonbills presents a most ludicrous appearance.

Where suitable vegetable food is to be found, the Shoveller does not pass it by. In many favorite haunts there grows a little tuber known as the wild

SHOVELLER

Order—ANSERES
Genus—SPATULA
Family—ANATIDÆ
Species—CLYPEATA

National Association of Audubon Societies

potato, which is about the size of an onion "set." Cut it open and the substance within the rind will be seen closely to resemble that of a potato. All river and pond Ducks are very fond of this wild food, and if any Shovellers are about they are pretty sure to get their share. They are usually silent birds while feeding, but on their breeding-grounds may frequently be heard talking among themselves, their one favorite word being "took," many times repeated.

Shovellers feed mostly at night, especially in places where they are much pursued by gunners. I have often seen dozens of flocks come from the marshes at sunrise and fly out to the open water, far from any place where a gunner might hide. There, if the weather is fair and not too windy, they will often remain until the shades of night and the pangs of hunger again call them back to the tempting marshes. They do not gather in enormous flocks, like some other Ducks. I have never seen over forty in one company, and very often they pass by in twos and threes. In hunting them the fowler usually conceals himself in a bunch of tall grass or rushes, on or near the margin of an open pond; and, after anchoring, near by, twenty or thirty wooden duck-dummies called decoys, sits down to wait the coming of the birds. Sometimes the Ducks fly by at a distance of several hundred yards. It is then that the hunter begins to lure them by means of his artificial Duck-call. "Quack-quack, quack-quack," comes his invitation from the rushes. The passing birds, unless too intent on their journey to heed the cry, see what they suppose to be a company of Mallards and other Ducks evidently profiting by a good feeding-place, and, turning, come flying in to settle among the decoys. It is just at this moment, with headway checked and dangling feet, that they present an easy mark for the concealed gunner.

Audubon declared the flesh of the Shoveller to be as good for the table as that of a Canvasback, and other writers have made similar statements. While visiting the Delta Duck Club, near the mouth of the Mississippi River, recently, I found that the members of the Club did not rate the Shoveller particularly high as a game-bird; in fact, Mr. Dymond, the President of the Club, told me that he usually let them go by without firing at them. In other hunting regions, where I have visited and talked with gunners, I found that Shovellers were regarded about as highly as Teals, and were usually shot whenever an opportunity offered.

The bird's body is really not greatly larger than that of the Teal, although its appearance seems to indicate a decidedly heavier bird. For some unknown reason Shovellers seem never to get fat like other Ducks, and perhaps this is one reason why some hunters do not care much for them. They are very swift flyers, and sometimes travel, doubtless, at the rate of from sixty to eighty miles an hour.

The summer home of the Shoveller tribe is in the vast expanse of territory between Minnesota and Alaska, although some pairs breed as far south as Texas; but they are rarely found nesting in the eastern United States.

In writing of their breeding habits in North Dakota, in *The Auk*, 1902, Mr. A. C. Bent says:

"They frequent the same localities as the Blue-winged Teal, are equally tame, and probably lay their eggs about the same time as this species. We found only two nests of the Shoveller, in spite of their universal abundance. From the fact that we frequently saw them flying about in pairs, I inferred that many of them do not complete their sets before June 15, which would make this one of the later-laying species. After the sets are completed, the males associate with the Mallards and Pintails in the smaller ponds and open sloughs. Nearly every slough, meadow, or pond-hole that we visited contained one or more pairs of these handsome little Ducks. The charm of collecting and studying birds in this highly favored region is greatly enhanced by constantly flushing this and the other numerous species of Ducks from every favorable locality. We were kept in a constant state of delightful expectancy, and were seldom disappointed.

"The nesting-ground of the Shoveller is the broad expanse of virgin prairie, often far away from the nearest water, sometimes on high, dry, ground and sometimes in moist meadow-land or near a slough or pond. The first nest that we found was in the center of a hollow in the prairie between two knolls, where the ground was moist but not actually wet, and where the grass grew thick and luxuriantly. The next was well hidden in the thick, green grass, so that we never should have found it if we had not flushed the bird within ten feet of us. It was merely a depression in the ground, well lined with dry grasses, and sparingly lined with gray down around the eggs; more down would probably have been added as incubation advanced. The ten eggs which it contained were perfectly fresh when collected on June 3."

The Shovellers that in the winter inhabit the marshes, ponds, and rice-fields of the South Atlantic Coast reach that region after a long overland journey from their summer home in the Northwestern States or in Canada. They come to the coast in the neighborhood of Maryland, and then turn southward. The eastern flight thus passes southward of the Northeastern States, so that in that part of our country the Shoveller is rarely found.

Mr. Witmer Stone records only three occurrences of this bird in New Jersey since 1888. Eaton, in his "Birds of New York," says that although the species is found in migration in western New York it is seldom seen on the great ducking-grounds of Long Island. Mr. William Brewster, in writing of its occurrence in Massachusetts, declares it to be "one of the very rarest of the surface-feeding Ducks."

Before the sale of wildfowl was prohibited in New York, it was not uncommon to find Shovellers in the markets of its cities; but these were birds that were sent in from either the West or the South. In Mexico City, I found them common in the markets, along with Teals, Mallards, and Pintails. Where it is possible to sell them, they usually bring a fairly good price, although, owing

to their small size, they do not command so much as the Canvasback, Redhead, or Mallard. In the winter of 1915, a gunner offered to sell me a pair on the streets of New Orleans for sixty-five cents. It was against the law in Louisiana to sell or offer for sale these birds, and I am not certain that this man was able to dispose of his Ducks before being taken in charge by a game-warden.

On the whole the Shoveller is not only one of our handsomest species of wildfowl, but is a very valuable game-bird. The numbers annually killed are prodigious, and it is the eighth wonder of the world that it has been able to withstand the continuous persecution of gunners to which it has been so long subjected. Laws prohibiting the sale of wildfowl have been enacted in a few states within recent years, and bird-reservations have been established in regions inhabited by the Shoveller. Where sale is prohibited, the chief incentive for killing by the market-hunter is taken away and thus one big destructive agency is removed. The progress made in both of these directions is too slight to insure the perpetuation of the species on our continent; but, as Shovellers are still to be found in goodly numbers, and as the sentiment for bird-conservation is rapidly growing, it would appear that this Duck has a fair chance of persisting among us for a long time to come.

The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, Secretary

Address all correspondence, and send all remittances for dues and contributions, to the National Association of Audubon Societies, 1974 Broadway, New York City.

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Any person, club, school or company in sympathy with the objects of this Association may become a member of it, and all are welcome.

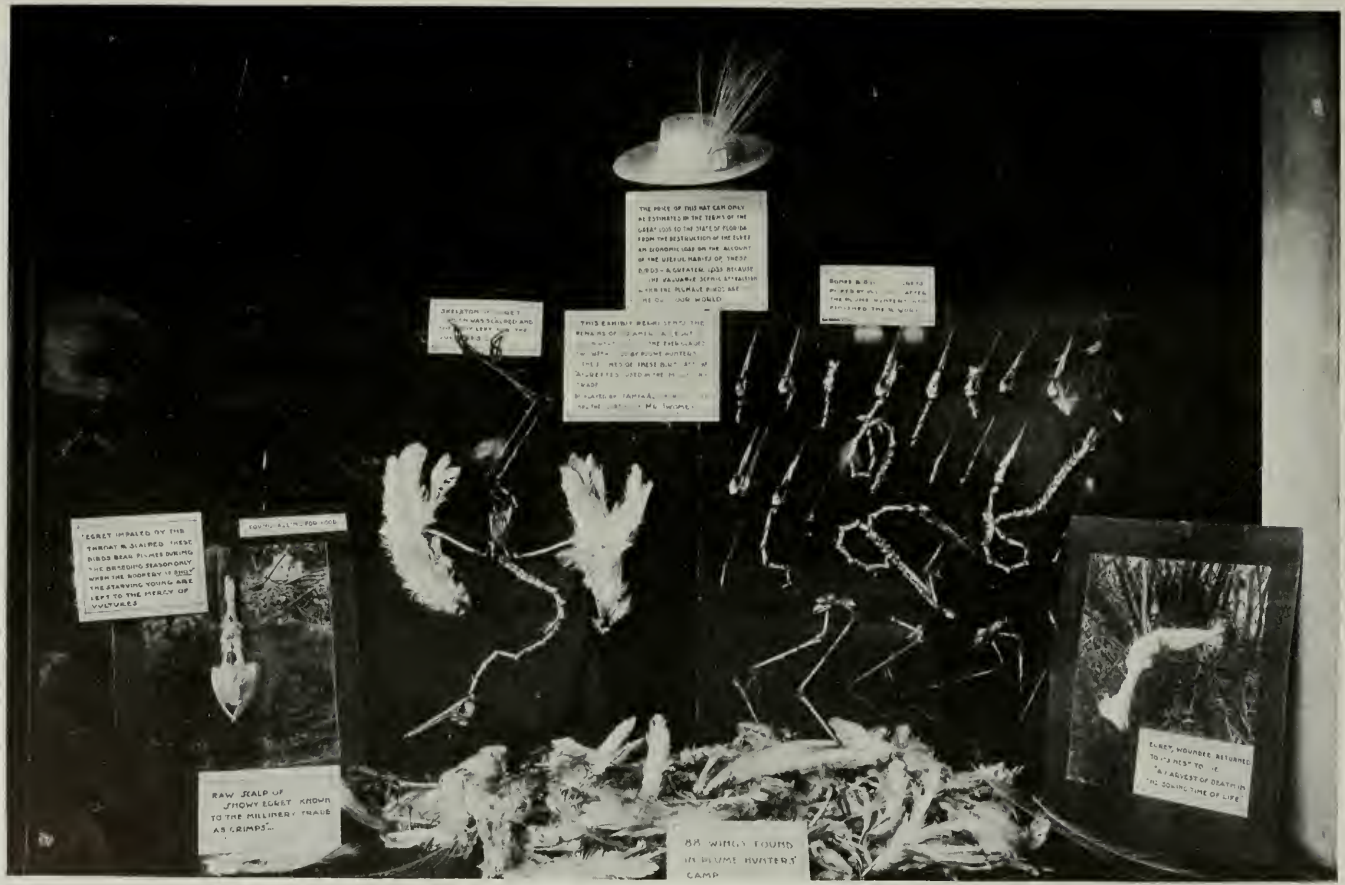
Classes of Membership in the National Association of Audubon Societies for the Protection of Wild Birds and Animals:

$5 annually pays for a Sustaining Membership
$100 paid at one time constitutes a Life Membership
$1,000 constitutes a person a Patron
$5,000 constitutes a person a Founder
$25,000 constitutes a person a Benefactor

FLORIDA STILL ASLEEP

FLORIDA continues to be the chief slaughter-ground for Egrets in the United States. As long as wealthy people go every winter and spring to Palm Beach and Miami, and are willing to pay exorbitant prices for locally collected "aigrettes," just so long the Seminole Indians of the Everglades, and the "poor whites" who haunt the Big Cypress, will kill the birds for the nine dollars that the plumes of each bird will bring. The Association's wardens have had wonderful success in guarding the nesting-colonies against raids, but *if they were withdrawn for a single season the accumulated results of years of protection would be swept away by the plume-hunters*, who would instantly rush to the easy feast of slaughter waiting for them. This has been demonstrated in more than one instance when, through lack of funds to pay a guard, we have been forced to abandon a colony to its fate. Therefore we now call upon our members and friends for contributions for this work during the coming year, and trust the response will be fully as generous as heretofore.

We get no help from Florida in this work. That state has no warden-system, and therefore does virtually nothing to conserve its wild life. Educational work among the inhabitants of the state has had little effect, for the men of the woods shoot the birds when opportunity offers, and the be-diamonded denizens of the cities have shown a greater disposition to make money than to aid in conserving the state's natural resources—which perhaps is natural. The funds that the National Association of Audubon Societies have expended in the laudable and highly humane effort of saving the Egrets in Florida are not furnished by the people of Florida. I can count on the fingers of one hand the names of all the men and women in that state who contribute a dollar to this work. And so we cannot look there for the sinews of war for our Egret campaign in 1916, but, as usual, must turn to the New England schoolteacher, the New York business-man, and others of our friends who dwell north of the Potomac River. In this work we can count, to some extent, on the coöperation of the state authorities of Georgia, South



AN OBJECT LESSON IN A TAMPA WINDOW
Photographed by Dr. Herbert R. Mills

Carolina, North Carolina and Louisiana, but as for getting any assistance from Florida—*No.*

The office of State Game-Warden was established in Florida by law in 1913, but the warden was unwise enough to prosecute some persons for violations of the law, and these and their friends at once went for his political life. The result was that when the legislature of 1915 assembled it destroyed the office. No protests were made, as far as I am aware, while the bill was pending, except from the Florida Audubon Society, and no one went to the capital city to argue the cause of the birds except one Florida attorney, who was hired by the National Association of Audubon Societies for that purpose.

The more striking forms of Florida's bird-life are all but swept away, her magnificent pine-forests have been utterly destroyed for lumber and turpentine, and now the lakes are being cleared of fish by a highly efficient and diabolical form of trap.

When will the really intelligent people of Florida awake to the desirability of preserving what nature has given it? From present indications there is not the slightest prospect of their doing so while one plumage-bird, pine-forest, or fish is left in the state.

THE EGRET SITUATION IN SOUTH FLORIDA

By DR. HERBERT R. MILLS

One of the accompanying photographs shows the exhibit recently displayed by the Tampa Audubon Society in the show-window of one of Tampa's leading milliners. This exhibit consists of the remnants of about fifty Egrets brought in

WINGS AND BONES OF WHITE IBIS KILLED WANTONLY BY MEN STYLING THEMSELVES "SPORTSMEN."

ABANDONED NESTS IN A RUINED IBIS COLONY

directly from a plume-hunters' camp in southern Florida, where agents of the plume-traffic have been unusually active this season. This grim evidence was displayed in order to bring the people of Tampa to a more thorough realization of the crime that is being enacted against the state of Florida. During the four days it was on display a crowd was always gathered on the sidewalk watching it, and reading every bulletin, word for word.

Many persons are growing erroneously optimistic in regard to the status of the Egret in Florida, for it is true that these birds are now occasionally seen where they have been unknown for years. During the past year, they have been quite frequently observed in the environs of Tampa, and a few days ago I saw an Egret flying over the city. While the Audubon Society has been the means of saving these birds from total extinction, the Egret is apparently increasing very little in numbers in South Florida. A steamboat company operating between Fort Myers and Miami refers, in an advertisement, to the "millions of Egrets" along Okeechobee and the Canals; but it is mistaken. This misconception has probably arisen from the inability of the average observer to distinguish between the Egret and other birds of white plumage, notably the White Ibis and the young of the Little Blue Heron.

Last summer I made a twenty-six-day cruise from Tampa to Key West, in company with Herbert K. Job, visiting all the bird-rookeries along the southwest coast of Florida, in the Ten Thousand Islands, and up certain rivers to the Everglades, and I saw less than five hundred pairs of Egrets and twenty pairs of Snowy Herons during the entire trip; and, with the exception of the Snowies, and possibly fifty pairs of American Egrets, all these birds were found in Alligator Bay at the head of Chatham River. This colony was guarded the past year by Sam Williams,

EDWARD A. McILHENNY

of Marco, an agent of the National Association; but unless a more adequate fund can be provided for this purpose. Mr. Williams must leave it to the plume-hunters.

In this connection, I would like to emphasize the necessity of having a competent warden protect this last Egret-colony of any importance on the southwest coast of Florida. Before these birds were molested by the millinery trade, they nested on all the islands in the bay, and in the mangrove bushes along the mainland clear to the sawgrass; but since the aigrette has been used extensively by the millinery trade, this colony has been shot out every year until 1913, when Sam Williams was first employed by Charles Willis Ward and the Audubon Society to protect them. Williams succeeded in bringing the birds through that season with the loss of only seven, which were killed by plume-hunters in a bold but unsuccessful attack upon the rookery. The next year, owing to lack of money, the rookery was not protected, and virtually all the birds were killed. The past year about four hundred pairs, only a fraction of the normal number for this place, raised their young under the care of Sam Williams—only to be slaughtered in 1916, unless money can be found for their protection.

To illustrate further the lawlessness of this region, I am sending two photographs taken in a devastated White Ibis rookery at the head of a river draining from the Everglades into the Ten Thousand Islands just above Northwest Cape. This rookery originally consisted of about ten thousand pairs of White Ibis, but it has been shot into by "sportsmen," and the birds that were not killed have deserted the rookery. These pictures show the empty and deserted nests, and a few of the many birds that had been left lying on the ground where they fell.

That the concrete evidence of the milliners' criminality, and the threatened doom of the Egret, may be as forcibly demonstrated in other cities as it was in Tampa, the Tampa Audubon Society herewith offers the loan of this exhibit to any reader of BIRD-LORE who will use it for exhibition, pay for its transportation, and return it safely to the Tampa Audubon Society.

Requests for this exhibit should be addressed to Dr. Herbert R. Mills, President of the Tampa Audubon Society, Tampa, Florida.

THE GREAT McILHENNY PROJECT

On his baronial estate at Avery Island, Louisiana, lives Edward A. McIlhenny, arctic explorer, big-game hunter, lecturer, and of late years conservationist. Mr. McIlhenny is the man who manufactures the well-known tabasco sauce and other southern delicacies. Incidentally, he owns one of the largest salt-mines in the country.

From the veranda of his residence one may look out over a vast expanse of salt-marsh, which extends away and away to the waters of the Gulf of Mexico. It is his work in connection with the preserving of the wild life of these marshes that of late years has brought him prominently to the attention of conservationists. Here is an extended winter range for various species of Ducks and Geese that come out of the North upon the approach of cold weather. Formerly large areas of this region were the haunts of innumerable market-hunters, who in autumn, winter, and early spring, slaughtered the wild-fowl in unbelievable numbers for the markets of New Orleans and of many cities in the Northern States.

In 1910, Mr. McIlhenny and Charles Willis Ward bought, and set aside as a reservation, 57,000 acres of these marshes. They ran the market-hunters out, and established guards to see that they stayed out. They also secured an additional tract of 13,000 acres, and on November 4, 1911, deeded this to the state of Louisiana as a Wild-Life Refuge.

Marsh Island, containing 77,000 acres,

was purchased on July 22, 1912, by Mrs. Russell Sage, the matter having been brought to her attention by Mr. McIlhenny. The object of these later purchases was, of course, to enlarge the region wherein the wild life of the country might be safe from human destroyers. But Mr. McIlhenny was not yet satisfied, and on April 29, 1914, he induced the Rockefeller Foundation to purchase a tract of 86,000 acres adjoining the other refuges. Thus there has been created a vast bird-reserve of about 234,000 acres of Louisiana marshes, the importance of which, especially from the standpoint of preservation of wildfowl, can hardly be over-estimated.

Mr. McIlhenny feels that what has been done should be considered only the beginning of a series of reservations for migratory birds, that should extend northward through the Mississippi Basin and onward to northwestern Canada. The project is a big one, but one that is well worth while. There should likewise be a string of refuges along the Atlantic seaboard and on the Pacific Coast, where protection from gunners may be had for the flocks of Ducks and Geese, as well as for the diminishing shore-birds that annually sweep up and down the coast. If one should doubt whether such an effort is worth while, one need only visit the Louisiana refuges, and witness the evidences of the abundance of wild life to be found there.

In company with Senator George P. McLean, Mr. McIlhenny, Mr. Job, and Messrs. Alexander and Arthur of the Louisiana Conservation Commission, the writer traversed this region in December, 1915. From an observation-blind we saw at least five thousand Ducks feeding within gun-shot of us, and often would see fully twice this number in the air at one time. We witnessed, one morning on Marsh Island, a flight of probably twenty thousand Blue Geese and Snow Geese. Wilson's Snipe we found in greater numbers than I have ever seen before. Coots were also very abundant. Several wardens provided with power-boats are employed to see that market-hunters, tempted by these sights, do not rig out their decoys and begin the work of slaughter, as they used to do when no protection for the wild-fowl hindered their activity.

THE YOUNG NEBRASKA ROBIN AFTER ITS BATH

NOTES FROM MANY FIELDS

A Rescued Robin

In looking about after a heavy storm in the middle of July, I was attracted by the cry of a mother Robin, which, on seeing me, began circling around, then darting to a place in the muddy road. I followed her, and found one of her babies so buried in a wagon-rut of mud that it was difficult to tell bird from mud, except by a faint pulse. Mother Robin flew by my side until we reached the garden. Then she seemed to call all the members of her family and friends, for in a few moments housetops, telephone wires, fences, and trellises were covered with excited Robins, Bluebirds, and Wrens. We put the lump of breathing mud into a bath to soak, which was duly performed in full sight of Mother and Father Robin, relatives, friends and Sparrows. When the diminished lump was rinsed, disinfected and dried, there was little left but a few pin-feathers, two closed eyes, and a broken leg. However, it was encouraging to feel a stronger pulse, and to see a huge bill opening for food.

After setting the broken leg, the merry sunshine, a soft bed in a basket, and a worm every second, helped much toward saving a valuable bird-neighbor.

The parents soon instructed me in "pure food for Robin culture." They are especially partial to beetles; however, a Robin menu includes angle-worms (which I learned to dig with a *sang froid* I never hoped to possess). Nice juicy caterpillars make up part of their bill-of-fare; as do also grasshoppers, cut-worms, locusts, and snails.

With the indefatigable assistance of the mother, who brought her babe no less than a hundred helpings each day, and myself hard at it (Father Robin worked only occasionally), the pin-feathers soon developed into a beautifully spotted breast and lovely brown plumage on the back. The broken leg was in splendid form in a fortnight, and, strengthened by daily massage, it was soon perfect. He enjoyed going about the garden perched on my finger, with an extra pressure of the recovered toes to show his appreciation.

Meanwhile a bracket had been made, and our rescued bird (well named "Trouvé Troubadour" by a dear friend) was settled comfortably in his very own house, only a short flight across the garden from his bath. Remember the value of bird-life, and that their future largely depends on our kindness to them.—Rosalie A. Whitmore, *Omaha, Neb.*

Sending Birds' Nests to the City

Mrs. Anthony W. Dimock, of Peekamose, New York, makes the following interesting report of her Junior Audubon Class:

"The Robin Junior Audubon Circle is composed of the boys and girls of three district schools in a Catskill Mountain valley. No one school has enough pupils of required age to form a circle, and the distances between them are so great that frequent meetings cannot be held, but good work is being done.

"The most interesting feature of our work the past year was the collection of abandoned birds' nests in the autumn. One school of five pupils collected over 100 nests. From these collections, two selections of ten nests each were made, to be sent to New York City. One collection went to the Jacob Riis Settlement, and one passed through the hands of three kindergartners, interesting 100 children. To each nest was attached a colored picture of the bird which had made the nest, and a description of its habits. Letters from the Settlement children and the kindergartners brought to the Circle expressions of delightful appreciation. The officers of the Circle are, President, Clark Sheley; Secretary, Helen DuBois; Treasurer, Pearl Mulford."

A Timely Suggestion

See that your bird-houses are ready in time for early migrants.

A NEIGHBORHOOD GATHERING
From a drawing by Walter M. Dunk

The National Park Service

One of the bills that will come before Congress this winter will be for the very commendable purpose of establishing a bureau under the Department of the Interior to have charge of the twelve National Parks, and about thirty National Monuments, that have been established up to the present time.

The work of Enos Mills in getting National Parks created, and the efforts of Frank Bond in securing the establishment of National Monuments, bid fair to bear fruit in the form of the creation of the bureau indicated above.

At the present time the management of the two groups of government reservations is under separate heads, and separate appropriations are made for their maintenance. It is understood that Secretary Lane greatly favors this proposal to Congress, and the National Association of Audubon Societies is actively working for the consummation of the plan. It may be remarked in passing that we also heartily endorse Mr. Mills's latest plan for having the Grand Canyon in Colorado made a National Park. We greatly favor this for many reasons, not the least of which is that every National Park is, in the strictest sense, also a bird-reservation.

To Junior Audubon Classes of Connecticut

The Junior Audubon work has grown to such an extent in Connecticut that it is impossible for the School Secretary to write personal letters to all of you. No doubt the seven thousand boys and girls of the state who joined the Junior Audubon Classes last spring are still interested. Do you know that by renewing your membership *now* you will receive a new set of leaflets, several of which will be of especial interest in the study of our winter friends? Last spring communication between a number of our Junior Classes was established, and we should like to see this work extended during the year. Will such classes as desire to correspond with other members kindly have their class secretary notify the School Secretary?

Early in November the Hartford Bird Study Club invited your School Secretary to Hartford, to assist in presenting the subject of bird-study to the schools. A lively three-days campaign, to which the President of the Hartford Bird Study Club devoted his time, ensued. Evening meetings for the teachers were held in Hartford and Glastonbury, and over four hundred pupils from these schools became Junior Audubon members during the month of November.

The Audubon Society of the State of Connecticut will loan to the schools of the state, free of expense, circulating libraries, bird-charts, portfolios of bird-pictures, and illustrated lectures. Application may be made to Mr. C. D. Hine, Secretary of the State Board of Education, Hartford.—Frances Hurd, *School Secretary.*

More Moving Pictures

Mr. Herbert K. Job has recently returned from an extended trip to the Wild Life Refuges in the Louisiana marshes, where he has been securing a new series of photographs and moving-picture films for the use of the National Association. By means of the courtesies extended by one of our members, Edward A. McIlhenny, he was enabled to use his moving-picture camera at close range on many varieties of Wild Ducks, as well as on Wilson's Snipe probing mud for food. The new collection also contains pictures showing the movements of Coots, Boat-tailed Grackles, Blue Geese, and other birds of the region. Scenes illustrating the life of trappers and hunters were also secured. It is our hope eventually to collect a large series of motion-picture films illustrating the more striking phases of American bird-life, the educational value of which should be very great. The Association has received many inquiries as to this, and the Secretary expects to answer them definitely soon.

A Michigan Bulletin

The Michigan Audubon Society has issued a large folder containing an appeal to the public to feed the birds. A synopsis of the state game-laws is given, also a short list of bird-books, a story purporting to have been written by a cat, and other notes and news. There is no indication that this is to be followed by other publications of a like character, but, should it be succeeded with other issues as interesting as this one,

BIRD-COLONY OF J. H. LARKIN, SOUTH BOSTON, MASSACHUSETTS. THE BOXES ARE MADE OF PAINT-PAILS.

we should all be glad. Our criticism of it, as an Audubon pamphlet, is that it bears no date of publication, and its pages are too large to render its filing convenient with other books and circulars of a like character.

A Bird-Box Experiment

The Association's Department of Applied Ornithology conducted an experiment in bird-boxes at Cold Spring Harbor, Long Island, last summer. Forty-four boxes were secured from a well-known dealer, and erected in suitable places under the direction of Herbert K. Job. After they were once put in position they were not molested, nor was any effort made to disturb the unwelcome occupants that in some cases took advantage of the hospitality thus offered. We wanted to see just what would happen without any interference. A census taken during the nesting season revealed the fact that only two of the boxes were known to be unoccupied. The character of the life that inhabited four others was not determined.

The following is a list of the tenants as known.

Bluebird	1
Flicker	1
Starling	3
House Wren	9
English Sparrow	17
Yellowjacket	1
Black Wasp	5
Flying Squirrel	1

A Conservation Dinner

The Game Conservation Society gave a "Wild Duck Dinner" at the Hotel Astor, New York, December 14, 1915. There was present a large representative body of men interested in the conservation of American game-birds. As the National Association is actively encouraging the public to increase wildfowl by artificial means, the Secretary was very glad to be present, and to respond to a toast on the subject.

The general effect of the dinner was to increase the interest of those present in the matter of producing more wild Ducks and upland game-birds, with a view not only to augmenting the food supply, but to increasing the wild stock through the liberation of many of these birds raised under restraint.

A Junior Publication

A Junior Audubon Class in Logan School, Minneapolis, has begun the publication of a magazine. *Owaissa*, they call it after the Indian name for Bluebird, as given by Longfellow in "Hiawatha." The first issue contains twenty-five pages, devoted to various bird-study and bird-

protection subjects. It is edited by thirteen girls of the eighth grade.

Bird Parks for Waynesburg

Mr. J. Warren Jacobs, the well-known manufacturer of Purple Martin houses, has made an offer to the people of Waynesburg, Pennsylvania, to make bird-sanctuaries of the parks in that city if he can

TAMING CHICKADEES
Mrs. George H. McGregor, Fall River, Mass.

have the coöperation of the authorities. If the very reasonable conditions he asks are complied with, he will supply at his own expense

"The entire parks with all necessary bird-houses, nesting-boxes, feeding devices and drinking-fountains, and two sections with berry-bearing and fruit-bearing shrubbery, plants, etc., nesting-bushes and, on the whole, make the conditions in these two spots ideal for the birds; in time even bringing the Bob-white to the grounds, if a protected flock can be found within a mile of the plot."

Another Worker

Mrs. George W. Turner, Secretary of the Audubon Society of Buffalo, has recently become semi-officially connected with the National Association as field representative.

As a lecturer on various bird-study subjects and bird-protection, she is very much in demand in western New York, and it is to be hoped that her activities will extend over a far wider range of the country. Interested persons may reach her by addressing their communications to 12 Clarendon Place, Buffalo, New York.

An Unique Museum

William Leon Dawson has sent out a formal statement that there has been incorporated in Santa Barbara, California, the "Museum of Comparative Oölogy," in which not only his own collection of birds' eggs will be deposited, but those of others from time to time. His idea is ultimately to have a large scientific collection of birds' eggs, which will be available for all bird-students along the Pacific Coast, or visiting students from other regions.

This movement doubtless will arouse much interest and coöperation. Among other uses it will surely serve to give young students an opportunity to become acquainted with the form and appearance of wild birds' eggs, without becoming oölogical collectors.

Virginia

The Virginia Legislature is in session, and again an effort is being made to secure the establishment of a State Game-Warden System. Such a measure has been introduced and defeated at these bi-annual sessions for several years. Success to the faithful workers!

BELATED STATE REPORTS

The following reports of State Audubon Societies were received too late to be published with others in the Annual Report of the National Association in the November-December issue of BIRD-LORE.

Florida.—The Annual Meeting on March 11, at Maitland, was a large and enthusiastic gathering. Dr. William F. Blackman presided. It was with regret that the resignation of Mrs. L. P. Bronson was accepted. Mrs. Bronson had been treasurer since the foundation of the Society, and had rendered most faithful and efficient service. The proposed act of the Legislature to remove the Turkey Buzzard from the list of protected birds was discussed, resulting in a vote to send a printed protest over the state. Although the bill passed, an amendment offering twenty-five cents for the head of every Turkey Buzzard shot was defeated.

Mr. Scott Way and Mrs. Vanderpool, Secretary, have distributed 2,000 copies of a bulletin entitled "Summary of the Bird Laws of Florida and the Federal Regulations Relating to Migratory Birds." A card, giving the most recent game-laws, has been printed for posting, and one thousand have been sent to post-offices, railroad stations, stores, and hotels, and to sheriffs and game-wardens. At the state fair in Orlando an exhibit of charts, drawings, and leaflets illustrating the work of the Society was attractively arranged. There are thirty-eight Junior Classes. Dr. H. R. Mills, of the State Board of Health, is president of the branch at Tampa, which has a large membership and is doing excellent work on the West Coast. Mrs. Katherine B. Tippetts, as president of the branch at St. Petersburg, reports frequent and interesting meetings. Prizes are given to children for bird-study, bird-houses and bird-protection. A year-book is published. The Humane Society acts with the Audubon Society in enforcing the law as to unlicensed cats. Some fines are collected, some arrests made. A few months ago a man about to ship a box of live Pelicans from Bird Key was arrested, when it was discovered that his "scientific purpose" license was dated 1902. He was fined $5 for each bird, and made to return them to the Key.

Mrs. Minnie Moore Wilson, President of the branch at Kissimmi, reports an increase of all birds during the year. Mrs. Julia A. Hanson, local secretary at Fort Meyers, has extended Audubon interest not only in her county, but in the state. Bobolinks were first observed here on August 24, although the usual date of their appearance at Fort Meyers is August 30. There seems to be a continuous stream of them at night, and many pass by day. Bird Day is observed in most of the schools in Lee County. We are fortunate to have Stanley Hanson appointed Federal Inspector of Birds in Florida.

Mrs. Algernon Haden, local secretary of Orlando, has continued to have supervision of schools, and of any violations of bird-laws. The Palmetto Club at Daytona has organized a bird-protection committee. Dr. Frank M. Chapman gave an interesting address last winter before this club. On April 16, 1915, the Cocoanut Grove Audubon Society, which will federate with the State Society, was organized by Mrs. Kirk Munroe, who became its first president. Meetings are held monthly, and the field includes the whole country. Junior Classes have been formed and subjects for study issued in a leaflet. All schools join in these studies, for which prizes are offered. The Florida Federation of Women's Clubs takes an active interest in bird-protection. Two prizes of $2 each were given to the pupils of the Robert Hungerford School at Eatonville for bird-study papers. The abolishing, by an act of the Legislature, of the office of the Florida Game Commissioner is a retrograde step for the state, and one that is regretted by all interested in bird-preservation.—MRS. KINGSMILL MARRS, *Chairman Executive Committee.*

FEEDING-STATION FOR BIRDS, BUILT BY GEORGE G. DECKER, OF RHINEBECK, NEW YORK

WEATHER-VANE FEEDING-SHELF MADE BY GEORGE G. DECKER

Illinois. — We have had an active and in many ways a satisfactory year. That interest in birds and their protection has greatly increased is shown by the number and character of the requests for literature and information that come from many sources, frequently from outside the state. Our libraries have been kept traveling, and the demand for lantern-slides and lectures has been constant. We have three new sets of pictures of much beauty and accuracy. The time and effort spent in collecting these, as well as the considerable expenditure of money, is justified by the increasing appreciation of their educative value in schools, women's clubs, and by general audiences. In response to request, our president, O. M. Schantz, and other members of the Board, have given illustrated lectures in many places adjacent to Chicago. Several new circulars relating to various branches of the Society's work were published during the year. One of these concerns the formation of local adult societies, and makes suggestions for their activities. We are hoping this year for some tangible result from this effort. In the hope of stimulating the work of Junior Societies we tried the plan this year of offering valuable and appropriate prizes for the best work of such clubs, this being made possible by the generosity and interest of a devoted member. The Annual Meeting was held at the Art Institute, as usual, on May 8, with a goodly audience present. The pleasure of the afternoon was provided in a beautifully illustrated lecture by Prof. Ralph E. Wager, of the State Normal School at De Kalb, entitled "Bird-Studies with a Camera."—Mrs. Frederic H. Pattee, *Secretary*.

Indiana (Report condensed).—The Indiana Audubon Society was organized April 26, 1898, and since that time has been in active operation. The past year has been a particularly busy one for the Secretary and other officers and members of the Society, who have given their time to correspondence, public lecturing, and other details. The Society owns a valuable set of stereopticon slides, to which a number of additions have recently been made. The enrollment of Junior Members is constantly increasing, and the coming year a special effort will be made to increase the list of the adult members. During the year our publications were as follows: "Indiana Bird-Laws," arranged by Robert W. McBride; "Constitution Revised;" and "Programs for the South Bend Convention." Thanks are due the National Association for bird-pictures and leaflets, which are a great aid in identification and in stimulating juvenile interest. The Society was represented at the meeting of the Federation of Women's Clubs last year, at Evansville, by George F. Clifford, and this year, at Indianapolis, by the President, Prof. Stanley Coulter.

The Annual meeting was held at South Bend, May 6 and 7, 1915. Among the officers elected for the coming year were: Stanley Coulter, President; Elizabeth Downhour, Secretary; and Amos W. Butler, Treasurer. The Annual Meeting in 1916 will be held at Rushville.—Elizabeth Downhour, *Secretary*.

North Dakota. — The membership of the Society has grown steadily. It is well distributed throughout the state and several local societies have been organized. A number of addresses have been given and exhibits made at various places. We are planning to encourage the formation of local game-preserves, as provided for by the recent legislature. Provision was made whereby land-owners may have their property set aside as a game-and-bird-reservation. Some members of the Society have already had such reservations made of their property and are striving to interest their neighbors in similar work.

Our annual meeting was held at Devil's Lake, North Dakota, early in July. Picnics were arranged, launch-trips were made to Bird Island, Brannon's Island, and other points of interest to bird-students. Interest was added by the visit of Mr. Witmer Stone, President of the Pennsylvania Audubon Society. His lecture was illustrated by a fine series of

colored stereopticon-slides. This meeting was one of the most successful that has ever been held in the history of the Society. The report of the Treasurer showed a comfortable balance in the Treasury. A Board of Directors elected for the coming year selected the following officers: W. B. Bell, Fargo, President; Mrs. William Falger, Devil's Lake, Vice-President; Mrs. George Hollister, Fargo, Secretary-Treasurer.—W. B. Bell, *President.*

NEW MEMBERS AND CONTRIBUTORS

Enrolled from October 20, 1915, to January 1, 1916.

Life Members.

Ayers, Miss Mary A.
Bartol, Mrs. J. W.
Bliss, Robert Woods
Burr, I. Tucker
Colburn, Miss Nancy E.
Converse, Mrs. Costello C.
Cotton, Elizabeth A.
Cross, Mrs. R. J.
Day, Mrs. Frank A.
Drummond, Miss Mary
Freeman, Mrs. James G.
Gray, Elizabeth F.
Hasbrouck, H. C.
Hill, Hugh
Howard, Miss Edith M.
Hunnewell, Walter
Jones, Jerome
Mead, Mrs. Charles Marsh
Merriman, Mrs. Daniel
Pomeroy, Mrs. Nelson
Quincy, Mrs. H. P.
Sharpe, Miss Ellen D.
Tuckerman, Alfred
Wakeman, Miss Frances

Sustaining Members.

Allen, Clarence J.
Archbald, Joseph A.
Arthur, James B.
Asten, Mrs. Elizabeth
Bailey, Dr. Pearce
Baldwin, Mrs. Arthur Douglas
Baxter, H. F.
Bayer, Mrs. Edwin S.
Bayne, Mrs. L. P.
Bayne, Paul
Beall, Mrs. I. A.
Beaux, Miss Cecilia
Beckett, Mrs. Charles H.
Bernheim, Henry J.
Bernheim, Mrs. Isaac J.
Berrien, Mrs. F. D.
Black, Mrs. Frank S.
Blair, Frank D.
Blodgett, Miss Eleanor
Bole, Mrs. B. P.
Boyd, Dr. James P.
Brown, Mrs. Brookes
Browning, Mrs. J. Hull

Sustaining Members, continued

Burke, Mrs. Stevenson
Caldwell, R. J.
Carey, H. T.
Carter, F. H.
Chapin, Mrs. Henry B.
Chapin, Miss Maria Bowen
Clark, Miss J. Dudley
Coconut Grove Audubon Society
Coffin, Wm. Edward
Colgate, Mrs. James C.
Colgate, William
Conant, Loring
Curtis, Mrs. Warren
Darlington, Mrs. Charles F.
Darlington, Rt. Rev. James Henry
Deicer, James H. and Donald
Del Drago, G.
Dickinson, Mrs. L. M.
Edwards, Miss Laura J.
Ehrich, Mrs. William J.
Ewart, Richard H.
Faulkner, Mrs. Edward D.
Feustman, L. P.
Fisher, G. Clyde
Fisher, R. T.
Fitzgerald, M. C.
Flagg, Miss Eleanor Lee
Fordyce, Mrs. J. A.
Fowler, Mrs. T. P.
Gamble, James N.
Gardner, Mrs. Henry B.
Garrigues, Mrs. Matilda
Geisenheimer, Theodore
Georgia Audubon Society
Glaser, Miss Lulu
Gray, Henry G.
Graydon, Mrs. F. W.
Gutman, DeWitt
Hamilton, Mrs. W. P.
Hand, Judge Learned
Hartshorn, Mrs. Stewart
Hawley, Mrs. Geo. B.
Hazzard, Mrs. R. P.
Henderson, Wm.
Henderson, Yandell
Holden, George A.
Hollister, Mrs. H. L.
Holmes, Mrs. John R.
Hutchison, Mrs. Miller Reese
Jennings, Edward B.
Jennings, Walter
Jermain, Miss M. C.

Sustaining Members, continued

Joseph, Mrs. Jacob G.
Kentucky Audubon Society
Kenyon, W. W.
Kirk, Mrs. George
Landers, Mrs. C. S.
Levy, Harry M.
Loring, Lindsley
Los Angeles Audubon Society
Luchsinger, Mrs. F. B.
Lyman, Frank
McBride, Mrs. Lee
McCarthy, Miss Hattie
McCurdy, Robert H.
McDonnell, Mrs. Thomas F. T.
McPhail, Leonard C.
Melish, Mrs. Thomas
Minnesota Game Protective League
Mudd, John Alexis
Murdock, J. B.
Oskamp, Clemens
Otis, Harrison G.
Otis, Mrs. H. G.
Palache, Whitney
Peckham, M., Jr.
Perkins, Master Harry A.
Peters, Mrs. A. J.
Pulsifer, H. T.
Richards, Mrs. L. S.
Robb, Mrs. Alexander
Sampson, Mrs. Albert A.
Schrimer, Mrs. R. E.
Selden, Mrs. Edward G.
Sharpe, Henry D.
Sherry, A. G.
Speir, Louis Dean
Stephenson, Fred M.
Stevens, Edward F.
Straus, Oscar S.
Terrell, Clyde B.
Thacher, Mrs. John Boyd
Thayer, H. B.
Titcomb, John W.
Vander Veer, Dr. A.
Votey, E. S.
Warburg, Mrs. Felix M.
Wells, Edmund Bulkley
Wigglesworth, Mrs. E.
Winne, Mrs. C. K.
Wills, Miss Margaret M.
Wyncote Bird Club

Contributors.

Adams, Thomas M.
Anonymous
Boardman, Mrs. Wm. H.
Burckhardt, Miss Elizabeth
Cheney, Mrs. Howell
Curtis, Mrs. M. M.
Duhme, Mrs. Louis
Hyde, A. S.
Mulhauser, F. P.

Contributors, continued

Mulford, Mr. and Mrs. Ren
Nichols, H. W.
Nippert, Alfred K.
Tyzzer, Dr. E. E.
Weston, W. H.
Whiting, John D.

Egret Fund

Balance unexpended from 1915 as per Annual Report	$711 26
Bond, Miss Mary Louise	1 00
Busk, Frederick T.	5 00
Crosby, Mrs. Ernest	5 00
Crosby, Maunsell S.	10 00
Curtis, Miss Mildred	10 00
Dabney, Herbert	2 00
Daniels, Mrs. E. O.	1 00
Dexter, S. W.	5 00
Dows, Tracy	50 00
Duer, Mrs. Denning	10 00
Durham, J. E.	1 00
Ensign, Charles S.	1 00
Estabrook, Arthur F.	10 00
Faulkner, Miss Fannie M.	10 00
Gilbert, Miss Marie	2 00
Hale, Thomas, Jr.	1 00
Hoe, Richard M.	50 00
Hubbard, Mr. and Mrs. T. H.	5 00
Hunter, Wm. T., Jr.	1 00
Jones, Miss Ella H.	3 00
Judson, Henry I.	1 00
Kimball, Mrs. D. P.	25 00
Knowlton, Mrs. Myra R.	2 00
Kuhn, A. K.	5 00
Lewis, Edwin J.	1 00
Lincoln, Mrs. Lowell	1 00
Luchsinger, Mrs. F. B.	2 00
Ludlow, Mrs. Henry	5 00
Lyle, Mrs. Louisa T.	2 00
Massachusetts S. P. C. A.	5 00
Netherlands Society for the Protection of Birds	5 00
Oppenheim, Myron H.	1 00
Phelps, Mrs. J. W.	10 00
Richardson, Mrs. M. G.	5 00
Schieffelin, Mrs. H. M.	10 00
Schurz, Miss Marianne	5 00
Sexton, Mrs. Edward B.	5 00
Shannon, William Purdy	5 00
Shoemaker, Henry W.	10 00
Sturgis, F. K.	5 00
Tate, J. M., Jr.	1 00
Tower, Ellen M.	5 00
Tyler, Mr. and Mrs. W. G.	2 00
Van Wagenen, Mrs. G. A.	2 00
Winkley, Rev. Henry W.	2 00
Total	$1,016 26

1. Bush-Tit
2. Lead-colored Bush-Tit
3. Lloyd's Bush-Tit, Male
4. Lloyd's Bush-Tit, Female
5. Verdin
6. Wren-Tit

(One-half natural size)

Bird-Lore

A BI-MONTHLY MAGAZINE
DEVOTED TO THE STUDY AND PROTECTION OF BIRDS
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. XVIII MARCH—APRIL, 1916 No. 2

The World's Record for Density of Bird Population

By GILBERT H. GROSVENOR
Editor of the National Geographic Magazine
With photographs by the author

IN the winter of 1913, our family bought a farm of one hundred acres, fifty acres in forest and fifty in fields, in Montgomery County, Maryland, about ten miles from Washington. We moved out in April. At the time, no members of the family, including my wife, six children, and myself, could name more than three birds—the Crow, the Robin, and the Turkey Buzzard. We had, however, become interested in birds, owing to our friendship for the Editor of BIRD-LORE, and for other Audubon workers, and determined to see what we could do to get birds around the home, which we named 'Wild Acres.'

The house is a typical old farmhouse, surrounded by an old apple and pear orchard, with vegetable garden and hedges, and open fields beyond. Surrounding the fields is a tract of fifty acres in woods, with a beautiful stream, and several springs scattered around in the fields and woods.

The first thing we did was to drive away the English Sparrows which had possession of the place. We got small shot-guns, and, whenever a Sparrow appeared, shot him. It wasn't long before those that were not shot, left. We then made houses for Martins, Wrens, Bluebirds and Flickers, some of which were immediately occupied. We had such success that in the winters of 1914 and 1915 we put up more houses, and in the spring of 1915 had attracted so many birds around the house that Dr. H. W. Henshaw, the Chief of the U. S. Biological Survey of the Department of Agriculture, became interested, and delegated Dr. Wells W. Cooke to visit our place. Dr. Cooke was so impressed by the number of feathered friends that we had gathered around us that he urged me to make a census of the birds living on an acre or two adjacent to the house, as he thought it probable that a count would bring us a world record. The record up to this time was held by a family in Chevy Chase, Maryland, who had attracted thirteen pairs of birds to one half-acre.

The prospect of securing a world's record was so inviting that, during the last week of June, 1915, I made a census of all birds nesting on the acre adjoining our house and barns, with the result that we found fifty-nine pairs of birds with young or eggs in the nest on that acre, the highest number of land-birds

A BLUEBIRD'S NEST BOX, IN WHICH A PAIR OF BLUEBIRDS REARED THREE BROODS IN 1914, AND AGAIN IN 1915

inhabiting one acre that has yet been reported to the Department of Agriculture or to any Audubon society. The details of the census are presented below:

LIST OF BIRDS NESTING ON ONE ACRE ADJACENT TO THE HOUSE AND BARNS OF GILBERT H. GROSVENOR IN THE WEEK OF JUNE 15–21, 1915

(Only pairs whose nests were located with young or eggs in them are counted.)

Flicker*	1 pair	House Wren*	14 pair
Bluebird*	1 "	Robin	7 "
Yellow Warbler	1 "	Kingbird	1 "
Orchard Oriole	2 "	Martins*	26 "
Catbird	2 "		
Song Sparrow	1 "	Total	59 pairs
Chipping Sparrow	2 "	English Sparrows	0
Phoebe	1 "		

The asterisk (*) indicates pairs nesting in boxes put up by the family.

A similar census made of the second adjoining acre showed thirty-three pairs nesting in this area, as follows:

LIST OF BIRDS NESTING ON SECOND ACRE

Song Sparrow	1 pair	Screech Owl* (no young in nest June 15, as brood had already left)	1 pair
Carolina Wren*	1 "	Martins*	18 "
Flicker*	1 "	Towhee	1 "
Maryland Yellow-Throat	1 "	Total	33 pairs
Brown Thrasher	1 "	English Sparrows	0
House Wren*	4 "		
Robin	2 "		
Catbird	1 "		
Chipping Sparrow	1 "		

I attribute our success primarily to shooting the Sparrows and driving all cats away, to putting up many boxes, to keeping fresh water handy at all times, etc. We did everything we could for the comfort of our birds; for instance, we put on twigs little pieces of the oil-paper that our butter was wrapped in, and we left mud in convenient places for the Martins. The Catbirds used the oil-

A MARTIN HOUSE IN THE MEADOW, ABOUT ONE HUNDRED YARDS FROM THE HOUSE

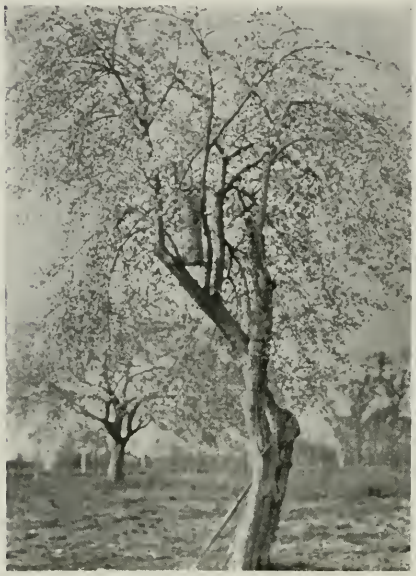
It is advisable not to place the Martin box too near the house, for the birds begin to chatter long before dawn, and will awaken the household.

MARTIN HOUSE IN THE HEN-YARD OCCUPIED BY TWENTY-FIVE PAIRS OF MARTINS IN 1914 AND 1915.

The Martins are very efficient guardians of our chickens. I have often seen them drive the Hawks and Crows away. They hate Buzzards also.

paper for their nests, in fact, they used all kinds of scraps. Imagine the delight of the family when, on examining one of the Catbird's nests in the autumn, we found one of the children's hair-ribbons, and also a piece of an old dress of the baby !

We had read a great deal about how tame birds become when they are protected, but were constantly amazed at the quickness with which they perceived the care taken of them. Perhaps the most remarkable nest was that of a



A SCREECH OWL'S NEST

This box was put up for Flickers in the winter of 1914. Flickers took possession in March, but were driven out by Sparrow Hawks. But the Sparrow Hawks were frightened away two weeks later by the too great prominence of the position. Later a pair of Screech Owls adopted it for their home. Last winter we took the box down and carried it to the barn, to serve as a model for making other boxes. On opening it we found a live owl inside.

A SPARROW HAWK'S NEST ON THE EDGE OF THE WOODS

We had much difficulty in keeping red and flying squirrels out of the houses placed near the woods. In 1915 red squirrels drove out a pair of Flickers brooding in a box on the forest edge.

Phœbe, which was built under the cornice of the piazza, within reach of my hand. We had a little school in the morning at the house, and ten children were continually running up and down the piazza, shouting at the top of their voices, but the Phœbe went on building her nest, then hatched her eggs and fed her young without fear, though she could see everyone and everyone could see her.

I was also surprised to find how friendly birds, even of the same species, can become. For instance, we had fourteen pairs of Wrens on a single acre, some of the nests being not more than fifteen feet apart. We also had Robins nesting only twelve yards apart. The Bluebirds, on the other hand, do not like

A FLICKER WAS NESTING IN BOX AND DID NOT STIR, THOUGH THERE WERE FIVE CHILDREN IN THE TREE AND FOUR BELOW WHEN THIS PHOTOGRAPH WAS TAKEN. (June 7 1914.)

each other and would not tolerate another pair of Bluebirds nearer than 100 yards.

The first year we had no Flickers, but there was a pair nesting in an old apple tree on our neighbor's property. During the winter the tree was blown down and our oldest son obtained permission to get it. He cut out the portion of the tree which contained the nest, cleaned out the hole, and then hung the

AN APARTMENT HOUSE FOR WRENS

When we started building houses, we did not realize that Wrens would not share a house with another pair of Wrens. This house has rooms for eighteen pairs of Wrens. The room on the left was occupied in 1913, 1914 and 1915, and all the other rooms were vacant. Note Wren on box.

A WREN HOUSE IN THE GARDEN

Note the Wren on the perch. We had fourteen pairs of house Wrens nesting on one acre adjoining the house and barns in 1915. This is the largest number reported of Wrens living on one acre.

nest in a dying cherry tree, as shown in our illustration. The nest was not more than ten yards from the house, but was taken possession of in 1914 and again in 1915.

The photographs illustrate some of our tenants. We are putting up this winter many more houses on the rest of the farm, as, up to this time, our efforts have been confined to the ten acres nearest the house.

We have already found the following birds nesting on some part of the 100 acres of field and woods: Flicker, Robin, Catbird, Bluebird, Orchard Oriole, House Wren, Purple Martin, Summer Warbler, Brown Thrasher, Chipping Sparrow, Phœbe, Barn Swallow, Grasshopper Sparrow, Whip-poor-will, Towhee, Indigo Bunting, Black-and-White Warbler, Song Sparrow, Meadow-

A FLICKER'S NEST BOX ON AN APPLE TREE ONLY TWELVE YARDS FROM THE HOUSE AND BORDERING THE DRIVEWAY.

In this same tree, also, a pair of Robins and a pair of Chipping Sparrows nested in 1915.

A BOX OCCUPIED BY FLICKERS AND WRENS

When the Flickers came back the second year (1915), they tried to excavate a new door to their house, on the opposite side from that shown in the picture, but soon desisted, leaving a hole about 2 inches deep. Later a pair of Wrens built a nest in the new hole, so that in 1915 a brood of Flickers and a brood of house Wrens were living in the box at the same time. Note the Flicker's head in the doorway.

lark, Chat, Maryland Yellowthroat, Field Sparrow, Cardinal, Red-eyed Vireo, Ovenbird, Wood Thrush, Scarlet Tanager, Acadian Flycatcher, Great Crested Flycatcher, Mourning Dove, Kingbird, Red-headed Woodpecker, Wood Pewee, Bob-white, Chickadee, Titmouse, White-breasted Nuthatch, Carolina Wren, Mockingbird, Goldfinch, Crow, Bluejay, Downy Woodpecker, Hairy Woodpecker, Barred Owl, Screech Owl, Sparrow Hawk, Red-shouldered Hawk, Redstart, Yellow-throated Vireo, Cedarbird, Vesper Sparrow, Louisiana Water-thrush, and Ruby-throated Hummingbird.

We had, in 1915, seventy-five pairs of Martins in an area of approximately ten acres, and expect to have a great many more than this in 1916. We had one pair of Red-shouldered Hawks nesting in our woods, and kept them for two years; but they developed such fondness for poultry, being caught repeatedly thieving, that finally we had to shoot them.

We have in the woods a splendid pair of Barred Owls. They come around the barns at night, and I suspect them also of attempts at chicken-thieving, but they are too handsome and rare a bird in these parts to shoot. We have nothing good to say of the Screech Owl, which we suspect of having been the cause of the mysterious disappearance of many young birds from the nests.

If any one wants excitement, I suggest that he buy or borrow a stuffed Owl, and put it out in the garden in the daytime during the nesting season. All the birds in the neighborhood will soon congregate, and the children will learn the birds quicker than in any other way.

The Robin in Yosemite

By GARRETT NEWKIRK

In this divine cathedral grand,
O'erborne by silent awe I stand,
When, friendly greets me, near at hand.
The Robin in Yosemite.

Beneath high wall and towering dome,
By roaring rapids dashed with foam,
I hear the old, sweet voice of home—
The Robin in Yosemite.

I hear from every sculptured wall
The voices of the ages call,
And, cheering with their echoes all,
The Robin in Yosemite.

The Spring Migration of 1915 at Raleigh, N. C.

By S. C. BRUNER and C. S. BRIMLEY

THE migration of birds at Raleigh, N. C., during the spring of 1915 was so unusual that it is believed that a short account, together with a list of the records, will be of interest to the readers of BIRD-LORE. In considering the following remarks, it may be well to bear in mind that records of the bird migration in this locality have been made each year for the past thirty-one years. Also, the amount of time spent in making observations during the past season is significant. From March 19 to May 7, field trips were made by Mr. Bruner on forty-seven days out of a possible fifty. Prior to and after this period observations were made by him for several weeks at intervals of from two to four days. Mr. Brimley was in the field for twelve days from March 30 to April 28, but was unable to pay full attention to birds. The duration of each trip averaged about four hours, this figure not including the time spent in going to and from the city. Observations for the most part were made independently by each of the writers, and on lands differing somewhat in general character. It is believed that the great majority of species were recorded on as near the actual date of their arrival as it would ordinarily be possible to obtain them.

The most remarkable fact in connection with the season was the very great delay in the arrival of the earlier migrants and in the departure of the winter birds. This was very probably due almost entirely to the unusual weather conditions which seemed to prevail throughout the South during March and early April. March was abnormally cool, especially so during the latter part of the month. At Raleigh one-half of an inch of snow fell on the thirty-first, and this was soon followed by the most severe snowstorm on record for the month of April. On April 2, at 8 P.M., wet snow began to fall, and continued steadily until about 8 P.M. on April 3, the ground at that time being covered to a depth of about ten inches, the total fall being equivalent to thirteen inches of dry snow. In the wake of this storm came fair and very warm weather. By April 6 nearly all traces of snow had disappeared, and the birds began to arrive. Between April 6 and April 9, the Black-and-White Warbler, Louisiana Water-Thrush, Yellow-throated Warbler, Blue-gray Gnatcatcher, Maryland Yellow-throat, and White-eyed Vireo all reached Raleigh, these species being from nine to fourteen days late. Prior to this period the Chipping Sparrow had appeared on March 19—about two weeks late,—and the Blue-headed Vireo on April 1, this bird arriving only one week late. After April 6, the greater number of other species came in at about their usual time or a few days later, but several were decidedly early. The Kingbird reached Raleigh on April 12, the earliest date yet recorded in this locality. However, this was the only record for early arrival that was broken among the commoner species, although two others were equaled.

Six new records were established for late departures of winter birds, namely: Loggerhead Shrike, April 1; Fox Sparrow, April 6; American Pipit, April 6; Brown Creeper, April 19; Song Sparrow, April 28, and White-throated Sparrow, May 19. Two former records were duplicated and seven of the remaining fourteen species noted were from four to fourteen days later than the average. It is plain that species which leave normally before the sixth of April could have been delayed a few days by the severe weather of late March and early April; but it is not easy to understand how it could have affected, to any marked extent, the species which depart in late April and in May.

The migration at Raleigh was also characterized by an unusually great variety of species, including a number of very rare birds. A Black-crowned Night Heron taken on April 4 and a Bay-breasted Warbler observed on May 5 constitute new local records. Other rare or uncommon species worthy of especial mention are the Yellow-crowned Night Heron, Osprey, Black-throated Green Warbler, Yellow-legs, Pectoral Sandpiper, Bartramian Sandpiper, Cape May Warbler, Blue-winged Warbler, Chestnut-sided Warbler, Baltimore Oriole, Rose-breasted Grosbeak, and Wilson's Warbler. The total number of species whose arrival was observed amounted to no less than sixty-eight in all, which is the largest number yet recorded at Raleigh during a single season. This fact can probably in no way be attributed to the abnormal weather conditions before mentioned (except possibly in the case of the Night Herons), but rather to the large amount of time spent in making observations. Also the fact that two observers were in the field did not play so large a part in this as might be expected, as one of them alone observed all but one of the sixty-eight species recorded.

A. COMMONER SPECIES

I. Species normally arriving before April 1.

Name	Average date of arrival (1)	Arrival 1915	Days later or earlier than average.
Chipping Sparrow	March 7	March 19	12 late
Yellow-throated Warbler	March 24	April 7	14 late
Blue-gray Gnatcatcher	March 24	April 7	14 late
Blue-headed Vireo	March 25	April 1	7 late
Pectoral Sandpiper	March 25	April 13	19 late
Louisiana Water-Thrush	March 26	April 7	12 late
Maryland Yellowthroat	March 26	April 7	12 late
Black-and-White Warbler	March 27	April 6	10 late
Black-throated Green Warbler	March 27	April 10	14 late
White-eyed Vireo	March 31	April 9	9 late
American Osprey	March 31	March 28	3 early

II. Species normally arriving from April 1 to 10 inclusive.

Tree Swallow	April 3	April 13	10 late
Lesser Yellowlegs	April 3	April 13	10 late
Barn Swallow	April 7	April 13	6 late
Green Heron	April 9	April 14	5 late
Parula Warbler	April 10	April 15	5 late
Whip-poor-will	April 10	April 18	8 late

III. Species normally arriving from April 11 to 20, inclusive.

Name	Average date of arrival (1)	Arrival 1915	Days later or earlier than average.
Redstart	April 12	April 12	0 late
Yellow Warbler	April 14	April 17	3 late
Prairie Warbler	April 14	April 12	2 early
Yellow-throated Vireo	April 14	April 13	1 early
Spotted Sandpiper	April 15	April 13	2 early
Hooded Warbler	April 16	April 10	6 early
Crested Flycatcher	April 16	April 24	8 late
Red-eyed Vireo	April 16	April 20	4 late
Wood Thrush	April 16	April 11	5 early
Chimney Swift	April 16	April 13	3 early
Oven-bird	April 17	April 9	8 early
Summer Tanager	April 17	April 11	6 early
House Wren	April 17	April 20	3 late
Ruby-throated Hummingbird	April 18	April 14	4 early
Kingbird	April 19	April 12	7 early
Catbird	April 20	April 21	1 late

IV. Species normally arriving later than April 20.

Yellow-breasted Chat	April 24	April 27	3 late
Solitary Sandpiper	April 24	April 13	11 early
Orchard Oriole	April 25	April 27	2 late
Wood Pewee	April 25	April 27	2 late
Water-Thrush	April 27	April 23	4 early
Black-throated Blue Warbler	April 27	April 21	6 early
Green-crested Flycatcher	April 30	April 21	9 early
Bobolink	May 2	May 3	1 late
Indigo Bunting	May 2	April 27	5 early
Blue Grosbeak	May 3	May 1	2 early
Black-poll Warbler	May 4	May 3	1 early
Kentucky Warbler	May 5	April 23	12 early
Yellow-billed Cuckoo	May 6	May 14	8 late

B. RARER SPECIES (2)

Yellow-crowned Night Heron	April 2 and 8	Cape May Warbler	April 27
Black-crowned Night Heron	April 6	Olive-backed Thrush	April 28
Rough-winged Swallow	April 6	Blue-winged Warbler	April 30
King Rail	April 7	Scarlet Tanager	April 30
Rusty Blackbird	April 8	Wilson's Thrush	May 1
Bachman's Sparrow	April 10	Chestnut-sided Warbler	May 4
Grasshopper Sparrow	April 17	Baltimore Oriole	May 4
Bartramian Sandpiper	April 17	Rose-breasted Grosbeak	May 4
Purple Martin	April 17	Bay-breasted Warbler	May 5
Prothonotary Warbler	April 24	Gray-cheeked Thrush	May 13
Nighthawk	April 24	Wilson's Warbler	May 19

(The last two were noted 15 miles east of Raleigh.)

1. The average date of arrival was calculated from records made during the period 1884 to 1911 inclusive.

2. This group includes species of which our records are too meager or too irregular to obtain an average as to time of arrival.

First Efforts at Bird Photography

By H. IRA HARTSHORN, Newark, N. J.

With photographs by the author

THE accompanying pictures are the results of my first attempts at bird photography, and I want to let others know how much pleasure is to be derived from this method of studying birds. All the pictures I have taken so far are of the tame birds one sees every day around the house. That is, if one doesn't live in too big a city; in which case a trolley to the suburbs will answer, as it did in my case.

My equipment, which includes a second-hand camera, two plate-holders, an electrical release, a flashlight battery, small satchel, flexible wire, etc., did not cost over $8.

The first nest I saw last year was a Chickadee's nest. I found it on April 18. It was still cold, with not a leaf on the trees. The two birds were taking out

CHIPPING SPARROW FEEDING ITS YOUNG

chips from the top of a birch stump, which was about seven feet high. The hole was about eight inches deep. There was still no lining in the nest, so I knew that the birds had not prepared it for the reception of the eggs.

I visited it again on April 26, and expected to see two eggs in the little home; but, when I arrived there, I found that the nest had been broken off at the very bottom of the eight inches already dug. This was caused by the Chickadees' digging too close to the rotten bark, when the first gust of wind probably broke it. Much to my delight, the birds were not daunted by this misfortune, but kept on building. On April 24, the hole was started the second time. A

CHICKADEE LEAVING ITS NEST TO FORAGE FOR A FAMILY OF EIGHT

friend saw the Chickadees begin the hole. On April 26, the hole was six inches deep! The birds had dug through fourteen inches of wood to make their home!

On May 2 the nest was finished, and on May 9 there were eight eggs in the little bit of a hole that could hardly hold the mother bird.

May 23, I took my camera with me to the nest. I expected that the young birds would be out by that time, and that the old birds would be flying in and out with food, giving me many opportunities for photography. I looked in the nest and saw that every egg was hatched, so I proceeded to set my camera about two feet away, when who should appear on the ground-glass but one of the parents, with a mouth full of struggling little green caterpillars. She, if it were the female, looked at the camera a second or two, then, without another thought of the outside world, hopped down into the nest and fed her young.

The camera arranged, I was just about to seek concealment behind a bush, when both of the parent birds flew near the nest with food. I stood very still. One of the birds, the male, I think, stopped too, but the other one flew right into the nest. She soon came out, and stood on the very point I had the camera focused. Very slowly I put my hand up to the shutter-release, expecting the

CHIPPING SPARROW APPROACHING ITS NEST

bird to fly any minute; but at last I reached it and, click, I had my first 'close up' bird picture. And it was the best one, too; for although I took six or seven others, they did not turn out so well as the first one.

CHIPPING SPARROW BROODING

May 31, I went to take the pictures of the little Chickadees, but found that they were still too small to handle. I was not able to go again, but my friend reports that the whole family of eight young left the nest, and were very healthy-looking little birds. This nest was situated on the edge of a woods at Verona, N. J.

During the two weeks' vacation at Fredon, Sussex Co., N. Y., I found twelve nests, a list of which follows. All but three were found on a farm.

A HOUSE WREN ENTERING ITS NEST IN A FENCE-POST

One Robin's nest, containing one egg. Deserted for unknown cause.

Two Field Sparrows' nests. Each contained young, almost full-grown birds. One nest had an unfertile egg in it.

One Barn Swallow's nest, containing four eggs.

Two Red-winged Blackbirds' nests, each with four eggs. Both nests were broken up. One was entirely empty and the other contained the shells of the eggs. I could not find out the cause of this double tragedy.

Two House Wrens' nests. Both of these were in fence-posts. I caught one bird with the camera just as it was entering the nest.

Two Chipping Sparrows' nests. One was in an unusual place, on the limb of a Norway spruce that projected over the porch roof. I got some very good photographs of this family, which consisted of the parents and three young. The young were hatched on June 6, and they left the nest on June 15.

One Kingbird's nest, containing three eggs, was on a limb of a willow tree that extended over a pond about ten feet. The nest itself was three feet above the water.

One Flicker's nest. I could not determine the number of young in this nest, but I knew they were there by their hissing at a shadow over the entrance to the nest.

This year the Bobolink appeared in the neighborhood of Fredon for the first time in at least four years, if not more.

Of all the songs of birds I have heard, I like the Bobolink's the best.

LONG-EARED OWL ON ITS EGGS IN AN OLD CROW'S NEST
Photographed by H. and E. Pittman, Wauchope, Saskatchewan.

The Interesting Barn Owl

By JOSEPH W. LIPPINCOTT, Bethayres, Pa.

With a photograph by the author

THE Barn Owl commands my respect. He is the greatest mouse-eating machine I have yet encountered, and as such surely deserves every consideration in these days of crop destruction by rodents. Like most Owls, he does not allow his presence long to remain unsuspected. A loud, harsh scream after nightfall, repeated at the right intervals to keep one awake and echoed by the young Owls when they appear, is his greeting. And well may the little mice shiver in their poor retreats!

I heard the good old Barn Owls again and again during early spring nights, and later found that two, or perhaps more, young ones were generally in or about a hemlock grove not far from the creek and the swampy meadows that make such ideal feeding-grounds and are, in fact, the nucleus of the rodent hosts that spread over the neighboring farms each summer. It was by mere accident, however, that I found a nest.

A neighbor was planning a greenhouse on the site then occupied by his young chickens and, to give security to the glass, cut down a great storm-battered and fire-scarred buttonball tree that stood at one end of his farm buildings. Down it came with terrific force, but without killing three young Barn Owls, which were able to give one of the workmen a big scare when he climbed over the top. And this happened in the middle of August, when one brood was already in the woods!

They were in a deep, dark, ill-smelling hollow, and a weird-looking trio indeed with the white down still clinging over the yellow-brown feathers. What startled the workman was a splendid series of hisses; for they understood how to make the sound about as wickedly as the most poisonous serpent.

A little Owl is generally all grit, and these were the grittiest, bramble-footed propositions I ever expect to handle. Their big eyes kept an unwinking glare fixed on each one who came near, and they leaped like lightning, often all three together, at a hand thrust within reach. It would have been very comical except for the bitter earnestness which the poor little fellows put into their defense, making one feel sorry for them when double gloves prevailed, and they were deposited in a chicken-coop nearby, to prevent interference with the chopping. Then, for hours after the moving, it seemed as if steam were strangely and violently escaping from an ordinary chicken-coop, much to the astonishment of visitors.

Around the tree were many of the small masses of fur and bones which Owls disgorge a few hours after meals. These show very well what animals have been taken and, in this case, were most interesting, since the dozens I examined contained the remains of field mice, deer mice, shrews, and moles only. No rabbits, no squirrels, no insects, no little birds! Indeed, there was

not a feather of any kind, although the little chickens had been running about and roosting all spring and summer within a few feet—alluring, easy and constantly announcing their presence by seductive peeping.

The old hollow must have suffered long use. It opened toward the south through a large limb hole about thirty feet from the ground, and also upward through the broken top of the tree; though that exit was not used, and probably only served to let in a veritable deluge of water during the thunderstorms. No

A YOUNG BARN OWL

doubt, too, the young Owls amused themselves watching the clouds and the stars pass slowly over their heads day by day, with the added excitement of a Hawk, Buzzard, or smaller bird now and then. They rested on layers of debris which, when examined, showed that honey bees had once been tenants, and later bats and generations of Owls, perhaps many other birds, for hollows have a strange, interesting history.

The birds themselves seemed about the size of old ones without the full feathering, strong muscle and weight. They were so queer and wore such

humorous expressions whenever approached that, from the first, they would have been objects of continual interested observation, were it not for the rather discouraging fact that this almost always brought on a quarrel. The bright light and excited feelings seemed to confuse one so much that he would mistake the others for enemies and pounce on them. This caused equally fierce retaliation every time, and resulted in all three being scratched about the thighs. Darkening the coop remedied this.

It impressed me then as strange that, with all the birds' show of aggressiveness, there was no snapping of beaks nor marked disposition to bite; but I later found that they did not have the same strength in their beaks as most varieties of Owls, particularly the Great Horned Owls, which crush the skull of a rabbit with such ease. This, I suppose, has something to do with the species' love of very small mammals, which can be torn to pieces and swallowed without trouble by those queer cavernous mouths. Their hooked claws, which gripped me on several occasions, were all right, though and as sharp as needles.

The youngsters were left severely alone until evening, when, with the lessening light, came a quick change. They seemed to lose some of their fear, and to be expectantly listening for something. Every now and then one would utter a rasping cry, which blended harmoniously with the insect chorus and yet could be heard a long distance.

Just as the sun set and the glow still spread over the west, the cries became very insistent, and a shadow seemed to pass for an instant over the coop as one of the parents flew quietly into a locust tree nearby, and stood there close to the trunk, a mouse dangling from the left foot. It soon flew out and circled noiselessly, only to disappear very soon, much to the disgust of the coop occupants. Several minutes elapsed, the evening silence broken only by the rasping call and the drum of the katy-dids; then an old Owl circled by bearing a mouse in its beak. It may have been the same bird and the same mouse, the deepening shadows making it impossible to see accurately

The night being dark, I left my hiding-place and the birds until morning, when it was surprising to find only the smallest of the three in the coop, and that dead. The other two had escaped; but how they squeezed beneath slats which allowed only the tiniest chicks to go through will ever be a mystery to me. I could not even pull out the remaining one. It was much less developed than the other two, both in size of limb and feather, and had evidently succumbed to the effects of the frightful fall, though its body showed no bruise.

I hunted around the debris of the felled trees, and finally spied the others, which had done some expert climbing and hidden in the darkest corners, one beneath a tree trunk, the other in a leafy top where it had evidently stayed all night, as evidenced by a kind of bed stamped down and lined with surplus food carried there by the parents. Such a supper! three particularly fine meadow mice and a fat star-nosed mole, all freshly killed and whole.

The youngsters, which at first crouched silently, were in a very bitter frame

of mind, so I carried them out by the wing tips—the only satisfactory way I found of handling such a brambly article—and later made them stand in the light for a photograph—a difficult matter, because they ran with all speed for the wood-pile as soon as released. Just as I thought I had them, after many attempts, one mistook the other for a foe, and, without preliminaries, went for him. However, the other one met the rush feet first and seized the attacking claws before they hit, practically holding down his brother by each foot while he glared into his face in comical fashion, and hissed for all he was worth. This holding hands continued with much comical shaking of heads, until both birds suddenly struck at each other somewhat as roosters do; then they held hands again until separated and put into a deep open-top box for safe-keeping. If left free, dogs, cats, or opossums would most likely have found them through the strong odor so noticeable about young birds of prey. The mice were, however, first cut into pieces and thrust down the apparently hungry birds' throats, while each was held by his feet and neck.

Every night after that the youngsters were visited and fed by the devoted old ones, and always it was with mice of some kind or moles—principally meadow mice, house mice, white-footed mice, shrews and ground moles—as many as eight sometimes, as shown by the disgorged pellets or uneaten bodies.

The parents also scrupulously cleaned the old box each night. They lived in the hemlock wood across the narrow valley, but in what tree I could not discover. One would appear soon after sunset with some kind of mouse, and by eleven o'clock had apparently satisfied the youngsters' hunger, for the rasping cries would usually cease and an occasional louder and clearer cry of the old birds pierce the darkness.

One fine morning found the youngsters gone. Day after day they had tried to jump out of the box, each time coming a little closer to the edge. After this they could be heard calling in the evenings, and sometimes until dawn. Always in the wood, they perched high up side by side or on nearby limbs, and lazily relied on their parents to keep up the good work of providing mice. On dark nights they called much longer than on moonlight nights, which convinced me that the hunting was more difficult then.

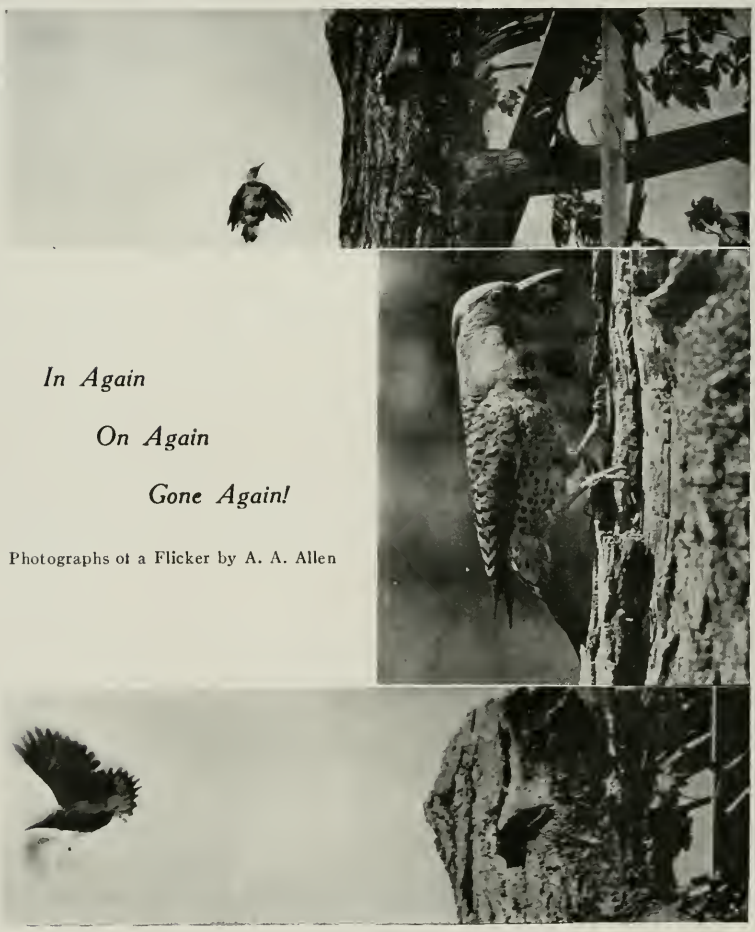
Occasionally a parent could be seen standing always very erect on the barn gable overlooking a truck-garden, but usually it would watch from a tree in the marshy meadows, now and then dropping to the ground and staying there a considerable time as if hunting on foot among the grass clumps, a method which, from the great agility of the young when pursued on the ground and in the brush piles, I can well imagine no cat could improve on.

I tried without success to draw them by imitating their strange cry, and also a mouse's squeak made by sucking loudly on the back of the hand. A Screech Owl and many wild animals would take instant notice of the latter, but not the Barn Owls. Even a rat caught in a trap failed to entice these birds, though several Screech Owls responded at once.

But who has stirred a Barn Owl? Over the dew-laden meadows he stands guard, or perhaps at the edge of the moonlit corn-fields, waiting for the only prey that seems to interest him. He knows the country like a book, the runways of the meadow mouse, the house mouse's path from corn shock to corn shock, the mole's early morning starting point.

Under the old buttonball tree the broods of young chickens ran from early morning to night. The owner felt that the large Owls were a menace to his flock and watched for them with a gun. But, with the fall of the old tree and a study of their food, a new light has spread to every farm in that vicinity.

I heard the young Owl's last 'rasp' on October 16; it was full of the weird power which thrills one in the dark hours. A few minutes later, a big bird flew low toward the orchard—the young Owls had taken to hunting at last.



In Again

On Again

Gone Again!

Photographs of a Flicker by A. A. Allen

The Migration of North American Birds

Compiled by Prof. W. W. Cooke, Chiefly from Data in the Biological Survey

With a drawing by Louis Agassiz Fuertes

(See Frontispiece)

THE BUSH-TIT

All of the forms of Bush-Tits in the United States are non-migratory. The present species, which is better known by the name of the Least Bush-Tit, is confined to the Pacific Coast, where it ranges from northern Lower California to southern British Columbia. This is the range of the typical form (*Psaltriparus minimus minimus*), while a subspecies called the California Bush-Tit (*Psaltriparus minimus californicus*) occurs over much of eastern California east of the Sacramento Valley, from the southern end of the Sierras nearly to the Oregon line. A third form, or sub-species, the Grinda Bush-Tit (*Psaltriparus minimus grindæ*), is confined to the southern end of Lower California.

THE LEAD-COLORED BUSH-TIT

The southern boundary of the range of the Lead-colored Bush-Tit (*Psaltriparus plumbeus*) is found in western Texas, northern Mexico, southeastern to northwestern Arizona, and the Providence Mountains, California. Thence it occurs north to central and northwestern Colorado, northern Utah and northwestern Nevada. A few individuals have been noted in southwestern Wyoming and southeastern Oregon.

LLOYD'S BUSH-TIT

Scarcely coming across the boundary from its real home in northern Mexico, the Lloyd Bush-Tit (*Psaltriparus melanotis lloydi*) occurs in the southern part of the mountains of western Texas and barely crosses the line in southwestern New Mexico.

THE VERDIN

Confined to the borderland of the southwestern United States, the Verdin in its typical form (*Auriparus flaviceps flaviceps*) is one of the most interesting birds of the desert and semi-arid districts, and is non-migratory. It ranges north to southeastern California, southern Nevada, northwestern Arizona (and extreme southwestern Utah), southwestern and southeastern New Mexico, western and southern Texas, and south into northern Mexico and the northern half of Lower California. The southern half of Lower California is occupied by a subspecies called the Cape Verdin (*Auriparus flaviceps Camprocephalus*).

THE WREN-TIT

The known ranges of the various forms, or subspecies of the Wren-Tit are given in the following paper. All the forms are non-migratory.

Notes on the Plumage of North American Birds

THIRTY-SEVENTH PAPER

By FRANK M. CHAPMAN

(See Frontispiece)

Bush-Tit (*Psaltriparus minimus* and races. Fig. 1). The Bush-Tits of this group may be known by their brownish crown. The male and female are alike in color; the young bird closely resembles them but has the crown somewhat darker, and the winter plumage differs from that worn in summer only in being slightly deeper in tone. Three races of this species are known: The Bush-Tit (*P. m. minimus*) of the Pacific coast from northern Lower California to Washington, in which the crown is sooty brown; the California Bush-Tit (*P. m. californicus*), which occupies the interior of California and Oregon, and has the crown much brighter than in the coast form; and Grinda's Bush-Tit (*P. m. grindæ*), a form of the Cape Region of Lower California with a grayer back.

Lead-colored Bush-Tit (*Psaltriparus plumbeus*. Fig. 2). The gray crown, of the same color as the back distinguishes this species from the Bush-Tits living west of the Sierras. The male and the female are alike in color; the young is essentially like them, but has less brownish on the sides of the head, and there are no seasonal changes in color.

Lloyd's Bush-Tit (*Psaltriparus melanotis lloydi*. Figs. 3, 4). Lloyd's Bush-Tit is a northern form of the Black-eared Bush-Tit of the Mexican tableland. Occurring over our border only in western Texas, southern New Mexico, and southern Arizona, it is rarely observed by the field ornithologist. The adult male may always be known by its black cheeks; and when the female has any black on the sides of the head (as in Fig. 4), no difficulty is experienced in identifying her. But immature males and often some apparently adult females are without black, and they then so closely resemble the Lead-colored Bush-Tit that it is impossible to distinguish them by color alone.

Verdin (*Auriparus flaviceps*. Fig. 5). When it leaves the nest, the young Verdin is a gray bird with no yellow on its head or chestnut on its wing-coverts, but at the postjuvenal molt both yellow head and chestnut patch are acquired, and the bird, now in its first winter plumage, cannot be distinguished from its parents. These closely resemble each other, but the female sometimes has less yellow on the head. After the colors of maturity are acquired, they are retained, and thereafter there is essentially no change in the Verdin's appearance throughout the year.

There are but two races of the Verdin. One (*A. f. flaviceps*) occupies our Mexican border from coast to coast. The other, the Cape Verdin (*A. f. lamprocephalus*), a smaller bird with a brighter yellow head, is found only in the Cape Region of Lower California.

Wren-Tit (*Chamæa fasciata*. Fig. 6). The Wren-Tit enjoys the distinction of being the only species in the only family of birds peculiar to North America.

It is restricted to the Pacific coast region from northern Lower California north to Oregon. While it presents practically no variation in color with age, sex, or season, it varies considerably with locality, four races of it being recognized. Since they are non-migratory, the purposes of field identification will best be served by outlining their distribution as it is given in Dr. Grinnell's recent, authoritative 'Distributional List of the Birds of California' as follows:

Pallid Wren-Tit (*Chamæa fasciata henshawi*). Common resident of the Upper Sonoran Zone west of the deserts and Great Basin drainage from the Mexican line through the San Diegan district, northward coastwise to San Luis Obispo and San Benito counties, and interiorly along the western foothills of the Sierra Nevada to the lower McCloud River, in Shasta County; also along the inner northern coast ranges from Helena, Trinity County, and Scott River, Siskiyou County, south to Covelo, Mendocino County, and Vacaville, Solano County. The easternmost stations for this form are: vicinity of Walker Pass, Kern County, and Campo, San Diego County.

Intermediate Wren-Tit (*Chamæa fasciata fasciata*). Common resident of the coast region south of San Francisco Bay, from the Golden Gate to southern Monterey County; east to include the Berkeley hills and at least the west slopes of the Mount Hamilton range.

Ruddy Wren-Tit (*Chamæa fasciata rufula*). Common resident of the humid coast belt immediately north of San Francisco Bay, in Marin, Sonoma, and Mendocino counties. Northernmost station for this form: Mendocino City.

Coast Wren-Tit (*Chamæa fasciata phæa*). Fairly common resident locally in the extreme northern humid coast belt. Humboldt and Del Norte Counties.

Notes from Field and Study

A Correction

Through a typographical error the Tree Sparrow was included in the Census of Mrs. Herbert R. Mills of Tampa, Florida, published in the January-February, 1916, issue of BIRD-LORE. The record should have read Tree Swallow.—EDITOR.

Hints for Bird Clubs

The greatest problem with most of our bird clubs seems to be: What can we do to make our meetings interesting, so that all the members, especially the younger ones, will be anxious to come?

In planning for parties, picnics, or other entertainments of that sort, we usually expect to have everyone present take a part in whatever games or sports there are, and, no matter how often we have them, there is never any question but that all who can do so will be there. I believe that bird-club meetings can be made equally attractive if we go about them in the same way, rather than to plan some sort of entertainment where only a few are to have a part, as is usually the case.

There is almost no limit to the number of interesting and instructive things we can do, and it will be possible for even the more advanced bird students to learn something new at nearly every meeting.

Every member should have a note-book for keeping a record of the birds seen and identified, with any new or interesting things observed, for comparison with others at each meeting; and each member should have a standing in the club according to the number of birds identified and the amount of work done for the birds. This will be an inducement for each member to do something or learn something new before the next meeting, and to be present at all the meetings, to learn what others have done. It will also be found helpful in learning about birds and in remembering what is seen; for, unless we have some special reason for noting carefully all that may be seen on our walks, even the most interested observers will miss many things, and will forget much of what they did see.

When about to start on a walk of about three miles, one bright pleasant morning last June, I decided to keep a list of all the birds seen and heard from the time I started until I returned. The walk was finished between twelve and one o'clock, when most of the birds were quiet and few were seen; yet I saw 105 birds on the trip, and had a good idea of the number and variety of birds one might see at this time of the year. If I had kept no record of the number, I could not have told how many I was likely to see, or which species would be seen oftenest. All such things will prove interesting at the meetings, and will add largely to our knowledge of birds in the course of a year.

In winter, we should note the feeding habits of the different birds and the number and kinds of winter visitors seen; it is also a good time to make a study of nests, where they are placed, and the material used in each.

In summer, there will be something for every day if we have our eyes open; nesting habits, bird-baths, and occasionally some rare migrant to tell about. It would be impossible to give a complete list of the interesting things to be seen at this time.

Every club should own a few good reference books, and have them at their meetings, to settle any questions that may arise. The 'Color Key to North American Birds,' by Chapman, will be found useful for identification, 'Wild Bird Guests,' by Baynes, for matters pertaining to bird clubs and bird protection, also 'Useful Birds and their Protection,' by Forbush.

There are many others that would prove beneficial, but these three are almost indispensable, if we would learn the ways of our wild bird friends and what we can do to help them.

It is understood that every family of bird lovers will be subscribers to Bird-Lore, for few would be willing to miss the interesting bits of information to be found in every number of this bird magazine.

Selections from Bird-Lore, the Audubon Leaflets, books on Nature by standard authors, and occasionally articles from some of the popular magazines, might be read at each meeting. This will prove a very interesting part of the program, and there will always be material enough to fill out any schedule.

Good plates of birds like those obtained with the Audubon Leaflets and the set published with the 'Birds of New York' will help in identifications, and, as the cost is very small, every club should have at least one set of each.

If we can get our clubs once started along these lines, it seems possible that it might become more of a problem to find time for everything than to find something to do.

One year's course in a bird club of this kind should give every member a fairly good knowledge of what we can do for the birds, and what they are doing for us.—W. M. Buswell, *Superintendent Meriden, (N. H.) Bird Club.*

Ornithological Possibilities of a Bit of Swamp-Land

For several years, I have had a bit of swamp-land under my eye, especially during the cooler months. It is not exactly a beauty-spot, being bordered by ragged backyards, city dumps, a small tannery, and a dismantled factory, formerly used by a company engaged in cleaning hair for plasterers' use.

A part of the surface is covered by cat-tails, the rest by a mixed growth of water-loving shrubs, as sweet-gale, leather-leaf, andromeda, and other shrubs which like to dabble their roots in ooze. A brook, connecting two large ponds, runs through the swamp, giving current and temperature enough to make certain a large amount of open water, even in the coldest weather.

A little colony of Wilson's Snipe have made this swamp their winter home for at least fifteen years, and probably much longer. Song, and generally Swamp Sparrows can be found here all winter. This winter, we have a Green-winged Teal, finding feed enough to induce her to remain; and over beside the cat-tails, about some fallen willows, a Winter Wren seems much at home.

During recent years, a sort of beach, made by dumping gravel to cover refuse from the hair factory, has been a favored feeding place for various Sandpipers, as well as the Snipe. The last of the Sandpipers leave in November, while the Snipe remain.

Bitterns and Black-crowned Night Herons drop in during the fall and summer, and our increasing Ring-neck Pheasant, the gunner's pet, loves to skulk around the edges.

Tree Sparrows, Goldfinches, and their kin attract an occasional Butcherbird and the smaller Hawks, Pigeon, Sparrow, and Sharp-shin in season.

Early spring brings a host of Blackbirds, Redwings, Bronzed Grackles, and Rusties; while a Cowbird hung about with some English Sparrows, until Thanksgiving time, this year.

We are always on the lookout for something new to turn up in the swamp, and are seldom disappointed. For so small a place, not over five acres, it surely is a bird haven; especially does it seem so when, but a few rods away on the nearby ponds, the ice-men are harvesting twelve-inch ice. Naturally, local bird-lovers are praying that the hand of "improvement" will be stayed a long time in wiping out this neglected little nook.—Arthur P. Stubbs, *Lynn, Mass.*

My Neighbor's Sparrow Trap

My neighbor one block to the north, Professor E. R. Ristine, who gives me leave to use his name in the present connection, finally lost his patience with English Sparrows (*Passer domesticus*), on or about May 15, 1915. The fact that

an elderly person sharing the home with his family could not sleep at reasonable hours on account of Sparrow chatter was an element in the decision to which he soon came. For into his hands fell an advertisement of a Sparrow trap, just such a two-funnel wire affair as was described and recommended as early as 1912 by the Department of Agriculture in Farmers' Bulletin 493. On May 20, 1915, the trap arrived, and was duly installed and baited. It was at first placed on the ground in the small chicken-yard at the rear of the house, and the outer funnel was baited with a small amount of cracked grain, the finer "chick-feed" proving to be most efficacious. The location of the trap was changed at different times during the spring, summer, and fall, and the total results on the Sparrow population were satisfactory beyond expectations.

By June 11, only twenty-two days after the trap was set out, 78 Sparrows had passed the fatal inner funnel of that simple contrivance, and at this, fortunately for the accurate details of the present account, my neighbor's interest was aroused to know precisely what the powers of his most recent purchase might really be. With a pencil he marked thereafter on the siding of his hen-house the mortuary record: 6/13—84, 6/17—100, 7/9—202, and so forth. That is to say, a total of 202 birds had been gathered in by July 9, fifty days after the trap was put into action, or an average of a little more than four per day. This rate of destruction was much increased during the following month, the 300 mark being passed on July 27, and the 400 mark on August 11. The rate of capture then declined, and it was not until September 18 that the figure 508 was registered. The trap remained set until December 5, at which time the deadly record stood at 597. A few dozens more had entered the trap but escaped through the insufficient latching of the "clean-out" door. After December 5 heavy snows fell, followed by sleet storms, and my neighbor temporarily placed his trap out of service on a back porch.

A few facts in connection with the above record will prove of interest. The heaviest catches were made when the currants became very ripe and the trap was placed under the laden bushes. Fewest Sparrows were caught when the sweet corn in the garden was in the milk stage, the birds preferring the contents of the juicy kernels to the dry grain with which the trap was baited. The largest catch on any one day was 20 birds, this number being reached on two different dates, June 27 and August 4. The Sparrows seemed to arrive in flocks of greater or less size, and the record would mount rapidly until these were gathered in. Then, for several days possibly, no birds at all would be trapped. And the fine feature of the entire season's experience was that this trap caught English Sparrows and no other bird whatsoever. The only exception to English Sparrows was a single hoary old house rat that had evidently followed a Sparrow in; at any rate, the latter was found partially devoured.

Relief from the Sparrow nuisance began to come to our neighborhood about the middle of August, after full 400 of the noisy chatterers had fallen victim to the innocent-looking wire cage. And by the time the Indian summer days of October came, the English Sparrow tribe in our part of town had dropped from the status of "abundant" to only "fairly common." Indeed, I have not seen more than six individuals together in our end of the little city at any time in the last three months.

Is it possible that my neighbor's experience was out of the ordinary? I do not see why it should be, but I have found a similar record only in the above-mentioned Farmers' Bulletin, where the capture of 300 Sparrows in six weeks in the Missouri Botanical Gardens, St. Louis, is noted. If it is at all typical of what may be accomplished, then one or two things seem clear. An easy method is at hand for holding in check the Sparrow nuisance and more attention should be given to Farmers' Bulletin 493 than seems thus far to have been accorded this worthy publication.—Charles R. Keyes, *Mt. Vernon, Iowa.*

A Tropical Migration Tragedy

[We are indebted to Prof. M. H. Saville for a copy of 'El Comercio' for October 18, 1915, a newspaper published at San Pedro Sula, Honduras, which contains the following account of a migration tragedy.—EDITOR.]

"At midnight, on October 10, 1915, there commenced to appear groups of birds flying in a southerly direction. At the time darkness set in, we began to hear the call of a great number of birds that were circling constantly over the city. This avian invasion increased considerably during the night. The main part of the army of invasion crossing the Gulf of Honduras arrived in the evening off the coast of Puerto Cortes. These birds do not travel by day, but follow the eastern shore, guided by certain groups that, toward night, exhausted, ceasing their flight, turn inland. The bright rays from the electric lights projected high in among the clouds, serving to indicate the position of San Pedro Sula and, attracted by its splendor, the bird emigrants, greatly fatigued by their vigorous exercise in the long flight against contrary winds in their travel across the Gulf of Mexico (approximately 700 miles), their short stay in Yucatan, and their flight across the Gulf of Honduras, the greater part of them fell one upon another in their revolutions about the lights, some dropping half-crazed against the roofs and fences, breaking wings and legs, some dying outright.

"At two o'clock in the morning, the greater part of the expedition directed toward this zone had arrived in the neighborhood of the city. It was at that time that the sound of their striking against the posts and the electric wires was a continual tattoo. It seemed almost as though the stones in the streets had been awakened, and were being hurled against the inhabitants. Numbers of birds striking against the zinc roofs gave off a sound like hurrying footsteps, the drumming on the zinc extending over the entire city. At one spot within a radius of two yards there fell dying six wounded birds. In the morning the streets were strewn with bodies; the greater part of them dead, others wounded."

A Shower of Birds

In the fall of 1915, a violent wind-storm passed through the southern states, just grazing the edge of Spartanburg, in upper South Carolina. Here the minister of the First Presbyterian Church was about to take shelter in his home, from the fury of the wind, when he saw what appeared to be a small, black cloud swoop down upon his roof and disappear. He hastened in, and found, to his and his family's dismay, that little black birds were fairly pouring down one of the chimneys.

The birds seemed to have been stunned by the force of the gale to which they had been exposed, and the floor was soon covered, several inches deep, with their inanimate bodies. They were picked up by the bucketful, and thrown out, but soon revived and flew away, none the worse, apparently, for their unusual experience. Two little fellows who were overlooked took refuge on a curtain pole, where they were discovered by a little girl, several hours later.

This is probably the only time on record when it literally rained birds. The birds were common Chimney Swifts.—R. L. FRIPP, *Spartanburg, S. C.*

A Heron's Involuntary Bath

Some of the little comedies of bird life are amusing to the onlooker, although, like those happening to human beings, not always so pleasant to the individuals participating. A neighbor of mine where I live on the shores of an island in the Great South Bay, took up his dock for the winter season and left a stake in the water. It is beneath the surface except at low tide when it projects an inch or two above. At dusk on the evening of October 23, 1915, two Black-crowned Night Herons came winging along. The one in the lead, happening to spy the top of the nearly submerged stake, immediately

dropped down and appropriated it for a temporary fishing-station. Its mate, probably trusting it had landed in very shallow water, dropped down also beside it. But it kept on going down until only its head and shoulders protruded. It was a surprised bird, and stood there a few minutes in its awkward predicament, looking around as if vainly trying to grasp the situation. Then, finally giving it up, it managed to spring out and fly off.—John R. Tooker, *Babylon, Long Island.*

Winter Notes from Carlisle, Ind.

We are having a very mild winter, with heavy rains. During last week it has been warm, and numerous Robins have been here. There is a twenty-acre alfalfa field adjoining town, and some eight acres of it was mown only once and the other crop left on the ground. This makes a regular haven for the Meadow Larks, and during the past week they have been having a regular carnival. You can hear dozens of them singing at a time. There must be hundreds of them in this field. Song Sparrows have also been singing.—J. H. Gilliland, *Carlisle, Ind.*

Notes from Nebraska

What is the most abundant bird in a given locality? This a question often conjectured upon by both ornithologists and casual observers. The terms "abundant," "common," "scarce," or "very scarce," form poor records of actual abundance, as suggested in recent issues of Bird-Lore. So, to get data on actual abundance, I took weekly bird censuses during the months of May, June, July, and a part of August, 1915, making counts of both number of species and number of individuals.

Of eight such censuses, taken during June, July, and August, in northeastern Kansas and southeastern Nebraska, Dickcissels proved to be the most abundant in six, if the exception is made of English Sparrows, which led in numbers in two censuses. This, I should say, would be the case over a large part of the middle West, of which the above-mentioned vicinities are typical.

Here are my figures on the Dickcissel:

*June 5. Sabetha, Kan., 99 individuals noted in 4¾ hours afield.

*June 12. Du Bois, Nebr. 64 individuals noted in 5 hours afield.

*June 19. Pawnee, Nebr., 35 individuals noted in 5 hours afield.

*June 27. Lewiston, Nebr., 109 individuals noted in 6½ hours afield.

*July 5. Beatrice, Nebr., 25 individuals noted in 4½ hours afield.

July 11. Beatrice, Nebr., 46 individuals noted in 6 hours afield.

July 25. Hebron, Nebr., 36 individuals noted in 3¾ hours afield.

*Aug. 1. Ruskin, Nebr., 39 individuals noted in 5 hours afield.

Dates preceded by an asterisk are those upon which the counts showed the Dickcissel to be the most abundant species, English Sparrows excepted. These figures indicate an average of 11¼ Dickcissels seen or heard per hour.

And, in spite of this prominent place the Dickcissel holds in our bird life, I have talked numbers of times with intelligent people who not only disclaim any knowledge of the bird, but say they have never heard the name 'Dickcissel' before.

On July 11, 1915, in and around Beatrice, Nebr., I counted 5,483 Blackbirds, which I am reasonably sure were Bronzed Grackles. Of this number, 5,260 were counted from one location on the bank of the Big Blue River, the flock passing continuously for about one hour. This is mentioned as being further indicative of actual abundance, and it might be suggested that, in actual numbers, the Bronzed Grackles might outweigh the Dickcissels, their immense numbers in flocks more than making up for the more uniform local distribution of the non-flocking Dickcissels.

In the May-June, 1915, number of Bird-Lore, I note that Mr. Ridgway classes the Upland Plover as a "species verging toward extermination," speaking

of it as now very scarce in southern Illinois. This bird of the prairies is still to be found in southeastern Nebraska, and I believe it could not be called very scarce in that locality. On June 27, 1915, in Pawnee County, Nebraska, I saw a flock of nine of these birds; on July 11, in Gage County, I noted one; on July 12, in Gage County, I noted eight; on July 23, in Thayer County, I noted one; and on August 1, in Nuckolls County, I saw a flock of ten.

Mr. Ridgway's description of the song of the Upland Plover is a fitting one. Its peculiar, mournful whistle *is* "one of the most thrilling of bird songs."—Howard Paret, *Kansas City, Mo.*

A Gannet Over the Hudson River

On October 16, 1915, I was crossing the Dyckman Street New York Ferry and observed a Gannet, which passed quite close to the ferry-boat, winging its way steadily southward toward New York Bay. It is so unusual and remarkable to find this bird away from the coast as to be worthy of record.—J. T. Nichols, *Englewood, N. J.*

Petrels on the Hudson

The preceding note from Mr. Nichols prompts me to add that one afternoon during the first week in August, 1915 (I failed to record the exact date), I saw from the Fort Lee (130th Street) Ferry at least a score of Petrels coursing low over the water and flying down the river. They were on the east side of the river, from which I had embarked, and as the boat carried me out of vision, Petrels were still passing. Doubtless they were Wilson's Petrels which, in their search for food, had gone far above their usual limits in the lower harbor.—Frank M. Chapman, *Englewood, N. J.*

Starling in Ohio

On January 8, Walter and Robert Kirk, farmer boys living near here, captured a Starling which has taken refuge in their barn. I was unable to identify the bird from their description of it over the telephone, but when it was brought to me I readily identified it, as I had been watching its progress west. Needless to say, I was somewhat surprised to see it here. Bird-Lore Christmas census for 1914 reports it for West Chester and White Marsh Valley, Pa.

So far as I know, this is the first record of the Starling for Ohio, and it may be the first west of the Alleghany Mountains. This seems a long 'jump' westward for any bird in so short a time, especially considering the mountains it would have to cross.

I have no doubt as to the identity of the bird, but have taken photographs in case of any question.—Sheridan F. Wood, *West La Fayette, Ohio.*

Evening Grosbeaks and Cardinals in Southern Wisconsin

About noon on January 22, 1916, as I was returning from a walk in South Park, a flutter of wings, accompanied by soft whistles and twitters, caught my attention and, to my surprise and joy, I counted a flock of nineteen Evening Grosbeaks in the small maple and elm trees bordering the sidewalk.

The bright sunshine falling on their plumage gave them an extremely beautiful and gay-colored appearance. The birds seemed to be nearly all males. They were quite tame, and I was able to approach close under the trees before they took to their wings, finally disappearing in a northeasterly direction. Two years ago, on one of the coldest days of the winter, a flock of about fifty visited Reedsburg and were observed by a number of our bird-lovers.

I cannot resist giving a brief account of the pair of beautiful Cardinals that have been staying in Reedsburg for the past two weeks. Although I did not have the good fortune to observe these rare visitors, yet their identity was made certain by the authoritative testimony of a num-

ber of bird-lovers who had ample opportunity to watch them closely from a curtained window, which looked out on the apple-tree and feeding-station only a few feet from the house; so there was no chance of an error in their identification. They were first seen on January 5, in the midst of a driving blizzard, with the mercury dropping to 25° below zero. The pair remained in the vicinity of the grain-strewn feeding-station for about half an hour, and have been seen a great many times since, by a large number of people. —Ethel A. Nott, *Reedsburg, Wisconsin.*

Evening Grosbeaks at Port Henry, N. Y.

On December 17, 1915, I saw a pair of Evening Grosbeaks.

On January 28, 1916, out over an open spot of water in Lake Champlain, I saw three Canada Geese and the men working near there told me they had been around there all the morning.

On January 7, 1916, I saw a large flock of Evening Grosbeaks.

The last two weeks I have seen many Crows as many as four in one flock.— Dora B. Harris, *Port Henry, N. Y.*

The Evening Grosbeak at Glens Falls, N. Y.

The Bird Club of Glens Falls reports that on January 25, 1916, Miss Shields saw on one of our streets, seven Evening Grosbeaks, four males and three females. —C. Eveleen Hathaway, *Secretary, Glens Falls, N. Y.*

Evening Grosbeaks at Saratoga Springs, N. Y.

It gives me much pleasure to report to you that on Sunday morning, January 30, 1916, there was a flock of Evening Grosbeaks feeding in the open woodland across the street. When first seen, about twenty of the birds were sitting quietly on the upper branches of a leafless maple, the balance feeding on exposed ground between snowdrifts under the trees. There were thirty-seven birds in the flock, of which one-fourth to one-third were males in the brilliant yellow, white, and brownish black plumage. They were talking to each other softly, and the low beaded call was frequent; but I did not hear the males whistle as they used to in Wisconsin.

I called the attention of Miss Adelaide Denton (the local authority on bird-life) to the flock, and we watched them for quite some time, before they rose, took wing, and wheeling, flew to the north, and disappeared. Miss Denton had never seen Evening Grosbeaks in this territory before, although she tells me Pine Grosbeaks are fairly common winter visitors.

I have re-opened this letter to add that part of the flock have returned to this locality. Twenty-five of the Grosbeaks now being in the maples across the way.

Perhaps I should add that I am quite familiar with the Evening Grosbeaks, having observed them every winter from 1900 to 1908–9 inclusive, feeding in the box elder trees in Eau Claire, Wisconsin. —Jacolyn Manning, M. D., *Saratoga Springs, N. Y.*

The Evening Grosbeak at Boston

Any record of the Evening Grosbeak on the Atlantic coast is so very rare that it may interest the readers of Bird-Lore to hear of a visit made to us by one on December 16, 1915.

Our bird was found in the Boston Parkway, close to the city blocks, flying about, at times rather wildly, at others, feeding tamely on the ground among the English Sparrows.

By its plumage, of which we give herewith a brief sketch, we judge it to have been a female or young bird. Head, rather dark gray; nape, yellowish green; back, pale brownish green; wings, black, interspersed with large areas of white; tail, black, with broad, white tip; chin and throat, gray; rest of under-parts pale yellowish or greenish brown; legs, pink; bill, whitish, or pale horn-color.

When at rest, the bird gave the effect of

a huge winter Goldfinch; in flight, its largely white wings strongly suggested a Snow Bunting.

We heard it utter two distinctly different notes; the first a rather loud and insistent monosyllable—perhaps nearer *peep* than any other—and the second, a peculiar little trilling call, not unlike certain notes of the Semipalmated Sandpiper.

Both as to plumage and notes, this species is very strikingly different from any other Grosbeak, of any age and either sex, in this part of the world. Its whitish beak, the yellowish green tone of its plumage, the absence of streaks, and the presence of such large areas of white in its wings and tail—not to mention the notes described above—all serve easily to distinguish this bird even from the female and young of the Pine Grosbeak, which, of all our species, most nearly resembles it.

Such other observations of this species as are made, this winter, thus far east, we hope to see recorded in BIRD-LORE.—E. G. and R. E. ROBBINS, *Brookline, Mass.*

Evening Grosbeaks at Poughkeepsie

On the afternoon of February 17, 1916, I observed seven Evening Grosbeaks feeding on locust seeds at our farm just outside of Poughkeepsie. They returned on the morning of the 20th, when they were also seen by Mr. Allen Frost, Prof. Saunders and Prof. Ellen Freeman, both of Vassar College, and Miss S. Dean, a student, who confirmed my identification. As I believe this is a record for Dutchess County, it seems worth reporting.—GEORGE W. GRAY, *Greenvale, Poughkeepsie, N. Y.*

Evening Grosbeaks in Lexington, Mass.

Although Evening Grosbeaks may very probably have visited Lexington during the flights of 1889–1890 and 1910–1911, there was no satisfactory record of the bird for the town until Mr. Francis S. Dane saw a bird near his house on December 31, 1915. This bird proved to be a member of a flock of eleven Grosbeaks, all in the plumage of the female. For a week or ten days this company remained in the vicinity of where the first bird was seen, the number of individuals varying somewhat; the maximum being eleven. Two fruited box elder trees were the attraction to the locality. So regular were their visits to these trees that observers could rely almost with certainty on finding the birds in one or the other of the trees (they were some two hundred yards apart) at eleven o'clock in the morning.

At all times, the Grosbeaks showed the fearlessness of man so characteristic of Pine Grosbeaks and the Crossbills, but their tameness was especially noticeable when the flock was busily feeding. The birds then appeared to disregard the presence of a party of observers; we could approach them closely, and see very satisfactorily their method of extracting the seeds.

The seeds of the box elder grow in pairs on a single stem, each seed having a wing. In the winter, however, the seed in its covering with the attached wing, having broken away from the stem, hangs from it only by a thread. It is an easy matter, therefore, for the Grosbeak to break off a single seed. Having detached it from the stem (to do this the bird merely leans downward and pulls off the husk and its wing), the Grosbeak cuts through the husk as far as the kernel and allows the wing to drop to the ground; this it does with a fluttering motion suggestive of a small moth. The remainder, the whole kernel and perhaps two-thirds of the husk, the Grosbeak mumbles in his bill, and in an incredibly short time discards from the sides of his beak the more or less macerated remains of the husk. Some of these particles fall to the ground, some cling for a time to the beak. The bird swallows the kernel. Upon examining the wings which the birds had clipped off, it was apparent that the birds had bitten directly over the kernel itself at a point rather nearer the wing than the center of the kernel. But, although by this incision the kernel was exposed, it was never severed and allowed to fall with the wing,

as would have been the case had the beak been closed and the bite completed. The cutting process was always arrested at the point after the casing had been divided, but before the meat has been severed. All this, although the process involved the nicest precision, was accomplished with great rapidity,—the wing fluttering to the ground within a second or two after the fruit was plucked from the stem.

The big birds are curiously inconspicuous when feeding in a box elder tree; their color harmonizes very closely with the dull grayish brown of the faded wings of the fruit, and, as the birds are for the most part silent, a feeding flock might easily be passed unnoticed. In spite of their quiet manner, however, the Grosbeaks are ever on the alert, as was shown when a large bird flew near them. They whirled away, panic stricken, giving their loud 'kerp'call.

On January 8, the flock of eleven female birds was replaced by a flock of eight Grosbeaks, two males and six females. These latter were all distinctly grayer than any of the individuals of the first flock, whose plumage was washed strongly with yellow. This second flock has remained to the present time, February 19, feeding first upon the box elder seeds until the two trees were practically stripped of fruit, then visiting a Japanese crab-apple tree loaded with minute apples, from which the birds obtained the seeds by munching off the pulp and discarding it. The flock has suffered the loss of two female birds (they were probably caught by a cat); otherwise the company has remained intact for six weeks. As in the case of the original flock, these birds fed early in the morning, again at about 11 A.M., and were rarely seen in the afternoon. On one occasion, they left the feeding-ground by mounting high in the air and taking a long, direct flight to the westward. Besides the box elder and crab-apple seeds, the birds have eaten wild-cherry pits, poison-ivy berries, and gray-birch seeds.

Evening Grosbeaks have been seen this season at several points in eastern Massachusetts. Mrs. Lidian E. Bridge kindly sent me a report of a flock which visited her place in West Medford, four birds on February 8 and 9. These birds fed upon the berries of the honeysuckle, mountain ash, and red cedar.

The large number of observers who came from a radius of ten miles to see these rare Grosbeaks demonstrated how great the interest in birds is at the present time. For nearly two months, several visitors came every day at the appointed time, and on Sundays and holidays the number often reached thirty or more. The total number of persons who saw the birds must have been hundreds. And each one, thanks to Audubon Societies and proper education in out-of-doors studies, came armed with a glass instead of a gun.—Winsor M. Tyler, M.D., *Lexington, Mass.*

Evening Grosbeaks in Vermont

On February 14, 1916, we were visited by a flock of nine Evening Grosbeaks, which were feeding on the buds of sugar maple in a grove of these trees near our place.

These birds were quite tame, allowing me to look at them through my field-glass at a distance of three rods, making identification positive.

I heard their call note and saw three of these birds at a distance on January 31.

On December 8, one was seen and heard too far away to note its markings.—L. H. Potter, *Clarendon, Vermont.*

Evening Grosbeaks in Connecticut

I wish to report a thrilling experience which I had this morning.

At ten o'clock, I glanced from my window, and saw White-breasted Nuthatches on the bird-shelf, Chickadees, Hairy Woodpeckers, a Brown Creeper, and Blue Jays, close by on two maples, a flock of English Sparrows gleaning on the ground, and two strange birds picking up their breakfast on the outskirts, but a few feet from the window.

The two rare visitors proved to be Evening Grosbeaks. They came toward me, went away from me, turned about and displayed themselves in every light, and

finally flew to a spruce tree on the other side of the house, where for about five minutes they gave every opportunity to study them at close range.

The large white patches on the wings and white tips on the dark tail feathers were very prominent.

The yellow forehead with black crown, the heavy bill, and the body of a soft yellow color, black wings and tail, made identification very easy.

I presume these little strangers will be heard from in other parts of Connecticut. —Mary Hazen Arnold.

[The context shows that this observation was made in Connecticut, but the observer does not give her address.—Ed.]

Martin Problems

I should like those readers of Bird-Lore who have accurately observed the habits of the Purple Martin to tell me if my experience of the past summer is a common one and what it means. For several years I have had a Martin house of ten rooms, only one room of which has ever been occupied and that always the west attic. This year (1915) on May 22, after visiting a short time several times a day for a week, three Martins, one male and two females, finally located in the house. June 1 the birds began carrying nesting material into both west and east attic rooms. The male seemed to work in the west room only, and one day was seen taking in green cherry leaves from a nearby tree. Only one male bird was ever seen about the house, so I concluded that this was a polygamous family.

The east room was not easy of observation, so I could not be sure of all that took place there, but know that it was occupied by a female all summer and that a nest was built. The male seemed to sleep in the west room, both birds going in at dusk. When incubation began, the male occupied one of the south rooms. July 7, a young Martin was found dead under the house on the west side.

He was very tiny, and could not have been more than a day old at most. His neck was as thin as a darning needle but his stomach was as large as a hickory nut, and just as hard. Thinking the bird abnormal, I opened the stomach only to find everything right, the abdomen being big and hard because of the great number of bugs and flies it contained. July 16 I went out of the city, so did not see the young leave the house. For several days previous to this, a baby Martin was constantly at the door, and I believe there was only one young bird.

My last year's family consisted of only two young birds, but one of which lived to fly from the house.

Neither eggs nor birds were found in the east room. Now, was this a polygamous family, or was it one pair of Martins and a non-mating female? Might it not have been my family of last year? I will appreciate answers from readers of Bird-Lore. —(Mrs.) May S. Danner, *Canton, Ohio.*

A Bold Winter Wren

On November 7, 1908, I had been standing for some time motionless, watching the antics of a Winter Wren which was foraging in a brush-heap piled against a fence. The Wren was very much occupied and paid no attention to me, as I stood about ten feet away. I had on a brown suit, and was certainly not a very conspicuous object. Suddenly the Wren appeared in a corner of the fence with a long morsel, the larva of some insect, in his bill. Evidently this a tid-bit which should be eaten leisurely for enjoyment. At any rate, after peering about he caught a glimpse of me standing conveniently near. And much to my surprise, with no hesitation, he flew straight at me and alighted on the side of my coat. I could feel his movements through the cloth. He clung there several seconds. But, in my attempt to get a better look at him, I doubtless moved. For without a sound or show of alarm he flew back to the fence and finished his morsel. I do not think the Wren implied that I was a stick, but he certainly believed me to be a tree!— Edward J. F. Marx, *Easton, Pa.*

Book News and Reviews

A Distributional List of the Birds of California. By Joseph Grinnell. Pacific Coast Avifauna No. 11; Contribution from the Museum of Vertebrate Zoölogy of the University of California. Published by the Cooper Ornithological Club, Hollywood, California, October 21, 1915. Roy. 8vo, 217 pages, 3 plates.

Dr. Grinnell admits to this list 541 species and subspecies as unquestionably Californian and includes in a Hypothetical List 61 additional species whose standing as Californian is doubtful.

"The systematic order is that of the American Ornithologists' Union *Check-List* (1910), except that within groups of species or subspecies a more natural arrangement is sometimes adopted, for example by according with geographical sequence. The A. O. U. order is thus accepted here because of the convenience thereby admittedly secured, in concording with the bulk of current ornithological literature." (Page 7.)

The distinctive feature of this paper is its brief but clear introduction on the life-zones and faunal areas of California with its comments on the factors governing the distribution of life, and on the relation of faunas to zones. It is illustrated with plates showing both zonal and faunal divisions and four profiles across the state.

The terms used for the areas here defined are employed through the list of birds and with the aid of the maps, convey a maximum of information with a minimum of words.

Full records and references are given for species of rare or accidental occurrence in the state as a whole, as well as boundary records for those forms occupying a portion of the state.

It goes without saying that this list is authoritative and aside from its purely scientific value it should be of much assistance in at least the provisional identification in life of forms so closely related that the locality at which they are seen is their best field character.—F. M. C.

The Double crested Cormorant (*Phalacrocorax auritus*) and its Relations to the Salmon Industries on the Gulf of St. Lawrence. By P. A. Taverner. Canadian Geological Survey. Mus. Bull. No. 13, Biol. Ser. No. 5; April 30, 1915. 8vo., 24 pages, 1 plate.

Complaint having been made that Cormorants were damaging the salmon fisheries of the Gaspé coast, the Geological Survey of Canada despatched Mr. Taverner with two assistants to study the food-habits of the Cormorant in the region where the charges against it originated.

It is not without significance that the Cormorant was accused, not by those who are dependent on fishing for a living, but by anglers who having rented certain salmon streams apparently feel that they have also acquired the power to inflict the death penalty on any form of life which they believe to interfere with their own interests.

Mr. Taverner was in the field from June 21 to August 23, and during this time he not only secured data which indicated that the charges against the Cormorant are unfounded but made an interesting contribution to our knowledge of the life-history of that bird.

There is, more in Mr. Taverner's thoughtful, well-written paper than is indicated by its title. We trust that it will be read by each of the complaining anglers!—F. M. C.

The Ornithological Magazines

The Condor.—The opening number of Volume XVIII of 'The Condor,' for January, 1916, is an unusually interesting one. Under the title 'Philadelphia to the Coast in Early Days,' Dr. Witmer Stone, in a paper read at the meeting of the American Ornithologists' Union in San Francisco, last May, outlines the development of western ornithology prior to 1850. Anyone interested in the history of early work in the West will find here a clear, compact, and convenient résumé of the contributors to ornithology made by

the voyages and expeditions of Captain Cook, La Pérouse, Vancouver, Lewis and Clarke, Major Long, Captain Wyeth and Captain Beechey, and special reference to the birds collected by Peale, Say, Townsend, Nuttall, Bell and Heermann.

Mrs. Bailey continues her description of 'The Characteristic Birds of the Dakota Prairies' with a charming account of the water-birds found along the sloughs and marshes.

Jewett contributes a brief paper on 'New and Interesting Bird Records,' concerning thirteen species found in eastern Oregon during the spring and summer of 1915.

One of the first fruits of the recent publication of Grinnell's 'Distributional List of the Birds of California,' appears in Dawson's seven-page 'Personal Supplement,' which contains notes and critical comments on sixty-three species. If other observers would publish such notes as they have with equal detail, it would no doubt result in a considerable addition to the wealth of information on the distribution of California birds which Dr. Grinnell has already so successfully brought together.

The common names applied to several birds come in for criticism in Notes from Field and Study. Henderson defends the term 'House Finch,' and condemns the two synonyms by which the bird is often known. The term 'Linnet' he considers not distinctive and 'California Linnet' as indefensible. Dawson proposes Auburn Canyon Wren as a preferable name for the Dotted Canyon Wren and Coues' Petrel instead of Ashy Petrel for the bird which 'simply isn't ashy.'—T. S. P.

The Auk.—Readers of the January issue will find therein a good deal about bird song as it is viewed from different angles by several contributors. Mr. H. Oldys discusses the 'Rhythmical Singing of Veeries' from a musician's standpoint, and Mr. A. A. Saunders, in a letter at page 103, upholds the scientist's belief in the use of a graphic method while, casually, in no less than three other articles, the writers make use of conventional human syllables in an effort to express bird-notes. After all, a person must hear a bird-song to know anything about it, and the crudest symbols, musical notes or words that he may employ to awaken his memory of the song mean more to him than any system that has yet been invented. It is his notation alone that will arouse his memory, for the science of musical sounds cannot go far in explaining what his ear has never heard. Mr. H. J. Fry offers 'A Study of the Seasonal Decline of Bird Song,' painstaking so far as it goes, but limited to a single season.

Mr. F. C. Lincoln records 'The Discovery of the Nest and Eggs of *Leucosticte australis*,' the Brown-capped Rosy Finch, in the Colorado mountains and shows us a half-tone of the site and one of the nest and eggs, the latter pure white. Messrs. B. S. Bowdish and P. B. Philipp record the finding of several nests of 'The Tennessee Warbler in New Brunswick,' and also show us half-tones of the rare nest and eggs.

A pleasing study of the courtship of several species of ducks is presented by Dr. C. W. Townsend, who uses binoculars to good advantage, and Mr. J. C. Phillips raises 'Two Problems in the Migration of Water Fowl,' one, regarding the occurrence of certain North American Ducks in the Marshall Islands, the other dealing with the behavior of Canada Geese when migrating.

Mr. W. A. Bryan declares that there is 'An Undescribed Species of *Drepanididæ* on Nihoa, Hawaiian Group,' but wisely refrains from preliminarily tagging it with a name (as has sometimes been done in similar cases) because no specimens have been obtained. Messrs. J. E. Thayer and O. Bangs list 'A Collection of Birds from Saghalin Island,' Mr. F. H. Allen describes 'A Nesting of the Rose-breasted Grosbeak,' and Mr. H. Mousley contributes the first part of 'Five Years' Personal Notes and Observations on the Birds of Hatley, Stanstead Co., Quebec, 1911–1915.' There is much of interest in Mr. Mousley's well annotated list which is to be continued. —J. D.

Bird-Lore

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Bird-Lore's Motto:
A Bird in the Bush Is Worth Two in the Hand

It is a long time since BIRD-LORE has published a more valuable and significant article than the one contributed by Mr. Gilbert H. Grosvenor to this issue. Its chief value does not lie in its important bearing on what may be termed avian sociology or on its surprising demonstration of the close connection existing between available nesting-sites and bird-population. Rather is it to be found in the relations which it reveals between human-life and bird-life as the result of the best type of what we have before called 'bird gardening.'

The birds which Mr. Grosvenor has brought about him are unquestionably more his birds than if he had shot them and placed their skins in a cabinet. With their death his responsibility for their welfare would cease. But a living bird, to which we feel we owe protection, is exposed to so many dangers that our fears for its safety are correspondingly aroused. These birds of our garden are our guests. Through the erection of bird-houses and by other means we have invited them to live with us and when they accept as readily as they have with Mr. Grosvenor, they make us realize not only our responsibility but they awaken the strongest sense of hospitality.

In a former number of BIRD-LORE we had something to say about what we believe to be the difference between ornithologists and bird-lovers. That is, between the bird student eager to devote his life to research work some of which may be so dry and technical that it would repel anyone but a born enthusiast; and the person whose interest in birds, while keen and genuine, does not beget that hunger for knowledge concerning them which is the birthright of the true naturalist.

The first type of interest we feel distinguishes the born ornithologists, the second is an almost universal heritage of mankind. Usually, however, it is dormant. We may be in possession of this priceless gift and still be unaware of its existence. Herein lies the value of nature-study, and particularly of the kind of educational work the National Association of Audubon Societies accomplishes through its Junior Classes. It is not to be expected that the one hundred and fifty odd thousand children included in these classes during the past year will become ornithologists. But if their inherent love of birds is quickened and they become acquainted with the more common species and are taught to realize the beauty and value of bird-life we shall have added immeasurably to their resources.

Mr. Grosvenor tells us that in April, 1913, when he moved to his country home near Washington, neither he nor any member of his family could name more than three species of birds. Opportunity so quickly added to this number that within two years, as his statistics show, he had succeeded in inducing to nest on his home acre more than twice as many birds as had been before reported from the same area and under similar conditions.

So much we learn from the figures given. But no figures can express the pleasure derived from the friendships which have been established between landlord and tenant, and between landlord's family and tenants' families. Mr. Grosvenor may regret that his own childhood lacked that association with the commoner birds which gives them an enduring place in our affection. But his pictures show that he does not propose to have his children denied this privilege.

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the Editor, 67 Oriole Avenue, Providence, R. I.

"Nature has no human inhabitant who appreciates her. The birds with their plumage and their notes are in harmony with the flowers, but what youth or maiden conspires with the wild, luxuriant beauty of nature? She flourishes most alone, far from the towns where they reside. Talk of heaven! ye disgrace earth.

"Sometimes I rambled to pine groves, standing like temples, or like fleets at sea, full-rigged, with wavy boughs, and rippling with light, so soft and green and shady that the Druids would have forsaken their oaks to worship in them; or to the cedar wood beyond Flint's Pond, where the trees, covered with hoary blue berries, spiring higher and higher, are fit to stand before Valhalla, and the creeping juniper covers the ground with wreaths full of fruit; or to swamps where the usnea lichen hangs in festoons from the white-spruce trees, and toadstools, round tables of the swamp gods, cover the ground, and more beautiful fungi adorn the stumps, like butterflies or shells, vegetable winkles; where the swamp-pink and dogwood grow, the red alder-berry glows like eyes of imps, the waxwork grooves and crushes the hardest woods in its folds, and the wild-holly berries make the beholder forget his home with their beauty, and he is dazzled and tempted by nameless other wild forbidden fruits, too fair for mortal taste.

"Instead of calling on some scholar, I paid many a visit to particular trees, of kinds which are rare in this neighborhood, standing far away in the middle of some pasture, or in the depths of a wood or swamp, or on a hill top: such as the black-birch of which we have some handsome specimens two feet in diameter; its cousin the yellow-birch, with its loose golden vest, perfumed like the first; the beech, which has so neat a bole and beautifully lichen-painted, perfect in all its details, of which, excepting scattered specimens, I know but one small grove of sizable trees left in the township, supposed by some to have been planted by the pigeons that were once baited with beech nuts near by; it is worth the while to see the silver grain sparkle when you split this wood; the bass; the hornbeam; the *celtis occidentalis*, or false elm, of which we have but one well-grown; some taller mast of a pine, a shingle tree, or a more perfect hemlock than usual, standing like a pagoda in the midst of the woods; and many others I could mention. These were the shrines I visited both summer and winter."—Excerpt from *Walden*, HENRY D. THOREAU.

"He saw with a clear and kindred eye, he understood with his heart, the life of field and wood and water about him. The open sky, the solitudes of the windy hill-top, the sweep of the storm, the spacious changes of dark and dawn, these, it seems to me, spoke to him more clearly than to others."—C. G. D. ROBERTS, in Introduction to *Walden*.

BIRD AND ARBOR DAY

AN AWAKENING

In most of the talks we listen to on Bird and Arbor Day, in most of the poems and prose selections we recite or read to celebrate this occasion, we hear about the awakening of spring, when birds return and trees and early plants blossom, and insects and hibernating animals emerge from a winter's sleep.

All Nature is pictured as rousing from the lethargy of cold December and colder January and February, under the influence of the sun, now early with its morning greeting, and of soft breezes which begin to take the place of chilling gales. But what part has man in all of this glad festival of activity and growth! Does he awaken too, and take his part in the general re-creation of Nature?

No, man is glad when spring comes, he welcomes birds and flowers and budding trees, but he has learned to build shelters for himself against storms, to fight the uneven cold with steady fire, and to raise and store food to nourish his body throughout the season when the ground is frozen and vegetation dead. He does not come to life and activity again with the changing seasons, and, much as he may enjoy spring with its multiform beauties, he seldom rouses out of the routine of his ordinary life, except now and then, perhaps, for a fitful instant. Well-fed, well-clothed and well-housed, he still fears the elements and dreads exposure and hunger. He is not a part of nature, but the ambitious master of nature. Only now and then does a man partly awaken from his civilized life and turn to Nature as to a mother. But when he does, when his eyes are fairly open, when his hand can write or his lips speak the truth, what a revelation comes not only to him but to those who understand his message!

It is of man's awakening that I wish to tell you this lovely Bird and Arbor Day season, an awakening which you must try to feel if you are not so choked and stifled in towns and cities by ideas of things to wear and eat and amuse yourself with that you cannot understand the truth.

In all ages, a few men have awakened to the touch of Nature. It would be worth our while to know even their names, but, better yet, to know their message. Some have lived as you and I live, others have lived only in books, through the imagination of other men. There was once a lad who was afraid, afraid of the dark, afraid of horses, afraid of many things. As he grew older, he began to feel that there was much he did not enjoy because of fear, and he resolved to conquer fear. He ran through a pasture where a bull was loose, and outwitted the charging creature, escaping to a place of safety. This was rash. He attempted to drive a horse of some spirit through crowded city streets, with no knowledge of driving or sympathy with horses. This was rash, too. He left his companions and guides asleep at night on the edge of the jungle, and wandered alone into the forest, unarmed and almost breathless with fear. It was a rash thing to do, but as he wandered or stood rooted to the ground, while deer, monkeys, frogs, owls, flying squirrels, and at last a tiger, crossed his path, he began to feel a new sense of security and serenity. He found it very wonderful and beautiful. "A warm, faintly-scented breeze just stirred the dead grass and leaves. The trees and bushes stood in pools of darkness, and beyond were pale stretches of misty moonshine and big rocks shining with an unearthly luster. Ahead was darkness, but not so dense, when he came to it, that the track was invisible . . . the moon was like a great shield of light spread out above him. All the world seemed swimming in its

radiance . . . He wished he could walk as a spirit walks—." . . . "Of course, the day jungle is the jungle asleep. This was its waking hour. Now the deer were arising from their forms, the tigers and panthers and jungle cats stalking noiselessly from their lairs in the grass. Countless creatures that had hidden from the heat and pitiless exposure of the day stood now awake and alertly intent upon their purposes, grazed or sought water, flitting delicately through the moonlight and shadows. The jungle was awakening. This was the real life of the jungle, this night life, into which man did not go. Here he was on the verge of a world that, for all the stuffed trophies of the sportsman and the specimens of the naturalist, is still almost as unknown as if it were upon another planet."

"He became less and less timorous as beast and bird evaded him or fled at his approach, and when the moon sank suddenly, and darkness settled down, 'a great stillness came over the world, a velvet silence that wrapped about him, as the velvet shadows wrapped about him. The corncrakes had ceased, all the sounds and stir of animal life had died away, the breeze had fallen,' and thus, calm and full of placid joy, he waited for the dawn, for he had conquered fear."

This is an imaginary picture, based no doubt on some actual experience. It is worth reading because it puts one *into sympathy* with Nature, even with one of its wildest and most uninhabitable parts. There are girls, and boys too, living in secure houses in village or town, *who are afraid*, afraid of the dark, afraid of the deep woods, afraid of wild, lonely places where snakes may be lurking, or some imagined beast. There are many grown-up people who are more fearful than children, to whom a storm is terrifying, who see little beauty in rough places, who take no enjoyment in fog, rain or snow. It is natural to be afraid, but it is not wholesome, and it betrays ignorance. This kind of fear deprives most people of much that makes up the very best of life. One need not be rash or daring to conquer fear. It is only needful to *awaken*, to get into sympathy with Nature, to see the world as it really is, and not as our shrinking bodies lead us to imagine.

A man died not long ago who for many years had lived perhaps as close to Nature as anyone in this generation. His name was John Muir. He loved the mountains with their vast silences and wide outlooks; the storms and winds, searching every hidden corner and ruling all Nature in their passing; the giant trees of his home country, majestic sentinels of tranquillity, and age-long growth; he loved the clouds and stars, birds, beasts and flowers; he loved mighty waters, whose power man's hand might never check. This man wrote at times modestly and reverently of what he saw and felt. You can learn truth from him. Many other men have seen deeply into Nature, and written with sincerity, pages which we do well to study. There comes to mind the poet Lanier, who, struck by the fatal hand of disease, sought to prolong his life by living with Nature in the open. How delicately and clearly he translated beauty into terms of

music and rhythm! How intimately he *sensed* the world about him! He wrote,

"I am not overbold.
I hold
Full powers from Nature manifold.
I speak for each no-tonguéd tree
That, spring by spring, doth nobler be,
And dumbly and most wistfully
His mighty prayerful arms outspreads
Above men's oft-unheeding heads,
And his big blessing downward sheds.
I speak for all-shaped blooms and leaves,
Lichens on stones and moss on eaves,
Grasses and grains in ranks and sheaves;
Broad-fronded ferns and keen-leaved canes,
And briery mazes bounding lanes,
And marsh-plants, thirsty-cupped for rains,
And milky stems and sugary veins;

. . . . . .

"All purities of shady springs,
All shynesses of film-winged things
That fly from tree-trunks and bark-rings;
All modesties of mountain-fawns,
That leap to covert from wild lawns,
And tremble if the day but dawns;
All sparklings of small beady eyes
Of birds, and sidelong glances wise
Wherewith the jay hints tragedies;
All piquancies of prickly burs,
And smoothnesses of downs and furs
Of eiders and of minevers;
All limpid honeys that do lie
At stamen-bases, nor deny
The hummingbirds' fine roguery,
Bee-thighs, nor any butterfly;
All gracious curves of slender wings,
Bark-mottlings, fiber-spiralings,
Fern-wavings and leaf-flickerings;
Each dial-marked leaf and flower-bell,
Wherewith in every lonesome dell
Time to himself his hours doth tell;
All tree-sounds, rustlings of pine-cones,
Wind-sighings, doves' melodious moans,
And night's unearthly under-tones;
All placid lakes and waveless deeps,
All cool reposing mountain-steeps,
Vale-calms and tranquil lotos-sleeps;—
Yea, all fair forms, and sounds, and lights,
And warmths, and mysteries, and nights,
Of Nature's utmost depths and heights,
—These doth my timid tongue present,

Their mouthpiece and leal instrument
And servant, all love-eloquent.
I heard, when 'All for love' the violins cried;
So, Nature calls through all her system wide,
'Give me thy love, O man, so long denied.' "

—From *The Symphony*, SIDNEY LANIER.

No message could be more beautiful or more welcome than this. Not poets and artists, but birds, streams, and the pure encircling air should call us into the open. We may not have the opportunity to wander in the jungle by night, or to climb lonely mountains or penetrate into the glooms of giant forests, but we can get outdoors by day into parks or country, and we can learn to sleep outdoors and feel the health-giving air with every breath we draw, and to awaken every morning with gladness that we are looking out upon the sky and rising sun, with no barriers of blinds and storm-windows between us and Nature. When we realize every day that to live, to simply be alive, is joy, then work will never mean drudgery or idleness and luxury seem things worth while.

If Bird and Arbor Day can make you understand and feel this message, it will be the happiest day of the year for you.—A. H. W.

JUNIOR AUDUBON WORK

For Teachers and Pupils

Exercise XXVI. Correlated Studies: School Gardening and Reading

In view of the fact that valuable suggestions are being received from time to time, as to practical methods of conducting and encouraging bird- and nature-study, it is perhaps a wise and timely interruption of the ordinary Junior Audubon exercise to submit the following five methods for the consideration of teachers and pupils. Each of these methods contains at least one idea which can be worked out along local lines by any teacher with the aid of willing pupils. Some of these methods are particularly applicable to Bird and Arbor Day, for we have now somewhat outgrown the necessity of simply having "exercises" to mark that day. When *all days* are Bird and Arbor Days, we shall have gained a strong point in bird- and nature-study, and let it be hoped no school will omit some sincere recognition of the day, this spring.

Ways of Keeping Up Interest in Bird-Study

I. A BIRD-GAME FOR THE SCHOOLROOM

During the years of 1914 and 1915, I have learned a great deal about birds. We have an Audubon Society in our room which I think is very interesting. We have about sixteen members, and we watch and study the birds very care-

fully. Our teacher read us a story out of Bird-Lore that one of her pupils wrote last year for the magazine. It certainly is interesting.

One day we went into Miss W——'s room, to have our society together. After we finished the program, we played a game called 'Guessing Birds.' Some one would go to the front of the room with a bird pinned on her back and one of the teachers would ask some one in the room a question about the bird. Then they would have to guess the name of the bird. We had lots of fun playing this game. Some of the children could not guess the bird that they had on their backs. Then the teacher would take if off and put her hand over the name of the bird and ask if they knew what it was.

There has not been much snow in Herndon, so the birds can find a good deal of food without anyone feeding them. With our fines we bought some wire and suet. One day we went to the woods not far from the schoolhouse to feed the birds. We tacked the wire on the trees and then put the suet under the wire. It will soon be time to go and put more suet under the wire for the birds. —Geraldine Sager (Aged 11), Herndon, Va.

[Very often the best way of fostering and keeping up interest in bird-study has to be considered, especially in Junior Audubon Societies or bird clubs. The idea suggested above seems to be an attractive one, for anything in the nature of a game usually appeals to young people. Several bird-games similar to "Avelude" are for sale, but these are played with cards, and are not suitable for use in the schoolroom. They make agreeable recreations for the home, however, and their use may well be encouraged.—A. H. W.]

II. A BIRD CONTEST FOR BIRD CLUBS

Place..... Time..... Date.....

1. A crowned head . . . . . (answer) Kingbird
2. An unsteady light . . . . . (answer) Flicker
3. An Eastern city visitor . . . . . (answer) Baltimore Oriole
4. A yellow conversationalist . . . . . (answer) Yellow-breasted Chat
5. The pride of the farm . . . . . (answer) Quail
6. A peace mourner . . . . . (answer) Mourning Dove

. . . . . .

21. Ruler of the fisheries . . . . . (answer) Kingfisher

Name of contestant.....

[Space is too limited to print this contest in full, but enough has been given to show how it was carried out. The Nature-Study Club of Indiana engaged in the contest, which was gotten up by one of its leaders, "to afford some amusement for the members while they were enjoying the beauties of nature. It was given under a large, spreading beech, and during the time the members were racking their brains to find the proper name of each feathered creature listed, the calls and notes of many of the birds could be heard all around, seemingly trying to assist the members to recall their names. The trip was a most successful one from a nature-study point of view, as the club traversed beautiful streams, lowlands and hills, and found a variety of trees and plants and many beautiful birds."

The approximate age of those taking part in the contest was about thirteen (ten to sixteen years). A prize was offered, and a little girl aged twelve who had thirteen correct answers out of the twenty-one puzzles given, won it.

This form of diversion in connection with bird-study has considerable to commend it as an occasional method to use to stimulate interest and start competition.—A. H. W.]

III. METHOD OF STUDY

Miss Mc—— has read your interesting letter to her class. And as I am one of the twenty-eight, or twenty-nine girls in her class I have decided to write, and give you an idea of what we are doing. I think that we (that is the class) are all interested in the Audubon Society for the protection of birds. On April 7 the class had their picture taken to send to you. On Friday afternoon we always try to read at least one of the leaflets of the lives of the birds. Each girl reads a paragraph, and as we read the teacher explains it to us. This summer we are going to have some bird-houses in the playgrounds of the school.

I live out in the suburbs of the city, and generally there are a great many birds that come to our door in the morning. Hoping to hear from your Society quite often; I remain one of the interested pupils.—Isabel Acorn.

Miss Mc—— read your letter to the class the other day, and we were very much interested in it. I like the Society, and every Friday in school we read a leaflet. The birds often come into the yard in summer, and we scatter crumbs.

We are making bird-boxes, and when the leaves come on the trees we are going to have shelves put up and put crumbs on them. It is nice to paint pictures of the birds and read about them.

In the summer out in the country the Canaries used to come and build their nests in the low bushes. I used to scatter crumbs for them, but they would rather have worms. The Kingfishers came early in the morning, so that we did not see much of them.—Dorothy Davies.

[The members of the Apulia Junior Audubon Society are from eight to twelve years old. The School Department was very glad to receive pencil drawings made from the educational leaflets, together with the letters given above through the kindness of Mr. T. Gilbert Pierson. The way in which the leaflets are used by this society is excellent, and suggests a method practicable for all junior Audubon Societies.—A. H. W.]

IV. RHODE ISLAND BOYS' AND GIRLS' CLUB WORK. HOME PROJECTS FOR 1915

Conducted by the Extension Service, Rhode Island State College and the United States Department of Agriculture

Boys and girls from nine to eighteen years of age inclusive may enroll. There will be achievement emblems offered for all those who do successful work. Local prizes may also be offered for good work and exhibits at local

shows, such as poultry, corn and flower shows, also grange exhibits. Boys and girls may take up any one or more of the following projects.

Home Garden.—Cultivation of vegetables, flowers, shrubs, etc. General care of the garden.

Market-Garden.—Cultivation of one-twentieth acre of vegetables.

School and Allotment-Gardens.—Cultivation of vegetables and flowers, etc., in a centralized garden at or near the school or on vacant lots.

Corn Clubs.—Cultivation of one-tenth acre of corn.

Potato Clubs.—Cultivation of one-twentieth acre of potatoes.

Dairy Herd Clubs.—Keeping an accurate record of all milk produced each day.

Canning Clubs.—Canning fruit and vegetables for home use or for market.

Baking Clubs.—Baking bread and cake.

Sewing Clubs.—Making garments and repairing.

Handicraft Club.—Making useful articles for use in the home or on the farm.

Bird and Tree Clubs.—The study and recognition of birds and trees.

Official enrollment cards will be sent to boys and girls who wish to enroll in one or more of the projects mentioned above. When received, their names will be sent to Washington, and Uncle Sam will correspond with them occasionally and send them bulletins of information and helpful letters. The State Leader or assistants will visit the local clubs from time to time, to help them with their work; he will also send helpful bulletins and letters as needed. Monthly reports will be required from each member enrolled in the club work, giving an account of his or her work.

The agent of the Extension Service of the Rhode Island State College writes:

"Inclosed please find a brief explanation of the boys' and girls' club work in agriculture, gardening, domestic science and handicraft work. This is a splendid movement for the Improvement Society to take up and encourage as a part of their constructive work in any community.

The greatest asset in any community or state is the boys and girls who are to be the men and women of to-morrow. We should see to it that they are encouraged to be industrious and thrifty. Work of this kind will provide a very profitable as well as an interesting occupation for many idle moments after school, and through the long vacations for our boys and girls. At this time of the year clean-up campaigns are being started, and I would like to tack on to the end of that slogan the word 'plant-up.' I think that boys and girls should be encouraged not only to 'clean-up' the rubbish about their homes, but to invest a few cents in seeds which will germinate and grow and produce a picture very much more attractive than can be produced by many cans of paint and, furthermore, if the right kind of plant is selected, the effect will be perennial."

An illustrated lecture on this subject may be secured at any time by making application to the undersigned. Bulletins and circular letters will be sent to the boys and girls who enroll in this club work from time to time. Personal visits will also be made as often as possible if desired.—Ernest K. Thomas.

[This is a kind of work every state needs.—A. H. W.]

V. MAKING A BIRD CENSUS

There are various ways of making or taking a bird-census, but all depend for their success upon certain rules.

1. Define clearly the area in which the observations are taken.

2. Study carefully the occurrrence of species in adjoining localities.

3. Note the differences of occurrence between the foregoing and the area under observation.

4. Study reliable data of other observers, in order to avoid "wild guesses" and to eliminate errors in your own observations.

5. Keep records in a usable form, so that data may be easily compared from year to year.

6. Distinguish between permanent residents, transients, and summer or winter residents or visitors, and accidental visitors.

7. When *in doubt* as to the identity of a species, *never enter* it in the record, simply to swell the list. Continued study will enable you eventually to determine the most puzzling occurrences.

8. Record carefully temperature, direction and velocity of wind, and if possible, barometric pressure.

9. Chart the area studied, designating wooded places, pastures, marshy and dry places, roadside, orchards, garden, and water spaces.

10. Study the destination and point of departure of migrating species.

11. Learn both the common names and the scientific names of species if you intend to be strictly accurate. Common names of the same species frequently differ in different localities and are therefore liable to be misleading. Scientific names are easily mastered and usually have a definite meaning, which will help you to remember some distinguishing character or habit of a species.

12. Always be open to fair criticism, and to acknowledge errors in observation. The most distinguished students of any subject are those who profess to have the most to learn. A keen eye and quick brain are indispensable to any student, and calm judgment must always precede reliable conclusions.

A very practical illustration of how a bird-census may be taken is described in Dr. C. F. Hodge's invaluable book, Nature-Study and Life. The schoolchildren of the city of Worcester, Massachusetts, worked together under Dr. Hodge's direction, and made a census of the nesting-species in a city block for two seasons three years apart, showing not only the number but also the increase and decrease of nesting-species during that time.

From Marion, Virginia, comes a detailed census of the birds found in the surrounding county during the spring migration. Space is not available for printing in full this census, which includes some ninety odd species, but the method followed, as explained by the following communication, is of interest, and should prove helpful to students in other localities. "The Woman's Club of Marion has an organized Audubon Society of sixty pupils and four teachers. The three Junior classes are taught once a week from the Audubon leaflets. The Senior Class has helped take the census of Smythe County under the guidance of its teacher. In sixteen field lessons, ninety-four species and eighteen hundred and sixty-three birds of these species have been seen."

It should be added that these Audubon classes work together with the Woman's Club and the Conservation Committee of Marion, thus fostering a civic interest in bird-life among young and old. If more clubs would interest themselves in organizing work of this kind, a great deal might be learned about the local occurrence and movements of birds which would be of use in following their migrations.—A. H. W.

SUGGESTIONS

1. Compare the methods of observation of Thoreau, Lanier and the author of the jungle quotations.

2. Which author seems to know Nature best?

3. Do you know the trees in your neighborhood as well as Thoreau did those about Concord and Walden Pond?

4. How many separate things in Nature are enumerated by Lanier in the excerpt from "The Symphony?"

5. Are you familiar with these things?

6. What is miniver?

7. How did Thoreau learn so much about Nature?

8. Are Lanier's allusions to Nature exact?

9. If you wished to tell a person who knew nothing about Nature, what to listen and look for, how many things could you name or describe to him?

10. Make a list of the trees, shrubs, and plants in your neighborhood.

11. Make a list of the spring migrants in your locality.

12. Make a study of what actually takes place during the transition from winter to spring.—A. H. W.

FOR AND FROM ADULT AND YOUNG OBSERVERS

SPRING

Spring has come at last,
And the birds are flying fast
To our great Northern skies,
Where they think it's paradise.
The rustle of their little wings
Tells us of the coming Spring.
And their little notes of love
Are like the peaceful songs of Doves.

—Virginia Stearns (Nine years old), Milwaukee, Wis.

MY BLUEBIRDS

Early in December, 1914, my brother and I cut down an old half-dead apple-tree, and on it we found a partly hollow log that the English Sparrows had evidently used for years. As I had my eye out for bird-houses, I confiscated it and finished hollowing it out. It made three log-nests, all of which have been used by bird tenants since then. On February 17, I put up two of the logs on the bank of the Ohio River, at a distance of 40 feet from our house, where they could easily be observed from nine different windows.

The site was ideal for a bird's nest. Below, 127 feet, the Ohio rolled majestically by, flushed with the melted snow that the spring rains brought from the mountains, and dotted here and there with floating cakes of ice. The other bank of the river rose 329 feet above the level of the water. It was heavily wooded and an ideal place for all kinds of birds. As this is right in the path of the Mississippi Migration Route, one could hear the "honk, honk," of Canada Geese, the talking notes of the Old Squaw, and once the maniacal laughter of a Loon, as it followed the Ohio to the mouth of the Beaver River, there probably resting and continuing its journey up the Beaver to its northern nesting-ground. Below, I give the dates of the important events in the Bluebirds' history.

February 17. Nest-logs put up.
February 25. First Bluebird seen.
February 28. Three pairs looked at both logs, fought for them, and *my pair* rented it.
March 21. Nest completed.
March 26. First egg laid.
March 27. Second egg laid.
March 28. Third egg laid.
March 29. Fourth egg laid.
March 30. Fifth egg laid.
April 13. Young hatched.
April 29. Young left the nest.

Prior to March 29, the river bank had been burned over twice for the purpose of improving the grass roots, but the Bluebirds never seemed to mind it, although the nest was enveloped in clouds of thick smoke both times. The last two days of March, and the first two of April were cold, below freezing, with a driving snowstorm followed by sleet; but the Bluebirds' activities never ceased. At this time the male passed the night in the nest with the female, 'twinkling' into the log at sunset. The male was very pugnacious, and seemed not to know fear. He would dash with equal courage at a Flicker or a Song Sparrow, when they approached his tree. Once I saw him actually knock a Flicker off a branch. Perhaps he would not have succeeded had the Flicker been aware of his approach, but the Bluebird came up behind and hit him below the belt. When I would go near the nest, the male would utter 'chuckling' notes, as if to scold and frighten me away. On several occasions he came so close that I could almost touch him.

When the young were about four days old, I set up my camera, three feet away from the nest, to obtain some pictures. The first time the shutter snapped, the female hopped down on to the branch on which the camera was placed, put

her head to one side, and seemed to say, "What is this that clicks in my face," and then she hopped all over it, pecking it.

Both parents were often seen cleaning the nest. They began to feed the young at about eight o'clock every morning, and continued it steadily at an average of every six or seven minutes until about six at night, using as food almost exclusively a certain kind of bug that was very hairy, brownish with black markings, and, except for the hair, might have been mistaken for castor beans, being about the same size. They seemed a huge mouthful for a young Bluebird. Several times a day I would climb up to the nest and whistle softly like a Bluebird before the aperture. The young would crane their necks and stretch their mouths for the supposed food, although none was forthcoming.

GOING HOME
Photographed by W. R. Boulton, Jr.

When the young flew from the nest, I felt as though I had lost a family. My grief was not such that I could not capture them, however, and after counting noses, I found that one was missing. I climbed up and there I found 'runtie' at the bottom of the nest, pitifully squeaking at being left alone. I took out the bottom and extracted him. Finally, after half an hour or more of posing, I got several good pictures of the babies on a dead branch. When I opened the nest-log to clean it, I found a little block of grasses about three inches in diameter and one inch high. It fairly glistened with shed feather-sheaths. In the bottom were six or seven bugs, of the species

LEAVING HOME
Photographed by W. R. Boulton, Jr.

mentioned before, that had evidently escaped the birds. Exactly two months after the first egg was laid, the second nest of the same pair was nearing completion in another of my boxes. Here are the dates.

May 29. First egg laid.
May 30. Second egg laid.
May 31. Third egg laid.
June 1. Fourth egg laid.
June 16. Young hatched.
June 23. Young have not flown yet.

While the female was incubating, the male still fed the young of the first brood, although not so often as when they left the nest.—Wolfrid Rudyerd Boulton, Jr. (Age 14 years), Beaver, Pa.

[Perhaps no better word of appreciation of this carefully worded description of personal observations could be given than to quote from a letter written by Mr. Herbert K. Job with reference to the data given by Master Boulton, Jr.: "His accurate information about the periods of incubation and rearing of the Bluebird came in handy to me just now, as there is a pair in a box up-state which I want to 'film' at just the right period, and now I can estimate when to make the trip." The pictures illustrating this article were not only taken, but also developed and finished by the observer.—A. H. W.]

A MUSICAL WOODLAND

Riding on my pony in a thick-set wood, I heard the "Feathered Musicians" playing on their instruments.

First the trill of the Wood Thrush, then the sweet trill of the Meadowlark, the rapidly repeated 'wickci' of the Flicker, the sweet melody of the Robin, the charming song of the Song Sparrow, and the 'chip' of the Chipping Sparrow, were most delightful.

Far off in the distance I could hear the sweet Canary-like whistle of the Goldfinch and the 'eak' of the Purple Grackle.

The woods rang with the music of the birds, for nothing is so sweet as natural music.—Sarah W. Weaver (Age 11 years), Baltimore County, Md.

["For nothing is so sweet as natural music."

This naive observation brings to mind the gurgle of brooks, waving treetops, and hum of busy insects, as well as the music of feathered songsters. It has the essence of spring in it, when awakening life so quickly voices itself in melody.—A. H. W.]

INTERESTING PERFORMANCE OF A TUFTED TITMOUSE

While taking refuge from a slight April shower on the porch of an unoccupied summer cottage at Lithia Springs, Ga., twenty miles from Atlanta, I once witnessed an interesting performance by a Tufted Titmouse. Having chosen a damp brown oak leaf from the ground, it flew with it into a bare tree, and, holding the leaf with its claw firmly against a branch, it drew itself to its full height, raised its head like a Woodpecker, and with all the might of its tiny frame gave a forcible blow to the leaf with its bill. This process was kept up nearly half an hour. The bird seemed utterly indifferent to the near pres-

ence of my two friends and myself. Once it dropped the leaf, but immediately picked it up and carried it back to the tree. A boy passed on the sidewalk below. The bird flew to a higher branch. At last its purpose seemed to be accomplished. It rested, and lifted the leaf by the petiole. We then saw that the hammering had made it into a firm brown ball nearly as large as an oak gall. The bird flew with it behind the kitchen-ell of the cottage. We hurried around, and were met by the Titmouse, empty-billed, who looked at us with an innocent, nonchalant air. Had it dropped the ball into its nest-hole?—Lucy H. Upton.

[Who can add any information which will throw light on this unusual observation? —A. H. W.]

TWILIGHT HOUR AT ASHAWAY

The western sky, soft tinted with the hues of setting sun,
Lends beauty to the twilight shadows lengthening one by one,
Twined mystic'lly together by the stirring April breeze
That sends a message of awakening through the leafless trees.

The fresh, cool air, bearing the scent of new-ploughed earth
Gives promise of the future harvest soon to have its birth,
When garden, field and orchard, now wearing brown and gray,
Shall change these duller colors for the vernal green of May;

The farmer reads the happy signs and whistles in true glee
Jangling in haste his cans and milk-pails merrily;
While lazy cattle straggle up the rocky barnyard way,
And the impatient horses paw and whinny for their hay.

A scuffle and a cackle in the hen-coop near at hand
Give token where the mother hen broods o'er her fledgling band,
And Spotty seeks the hay-mow, purring loudly in her pride,
For there, in safety waiting her, three kittens do abide.

The Robins and the Bluebirds call and answer all around,
And the cheerful little peeptoads seem to crowd the air with sound,—
And yet it is not noisy. Joyous peace is everywhere,
And a consciousness of Heaven makes the twilight hour more fair.

—Ruth R. Hayden.

[This poem was written by a student in The Rhode Island State Normal School. It is of unusual interest since the author, although blind, undertook the course in nature-study and succeeded so well that her instructor writes: "I am tempted to say that only those are blind who *won't see*. I am convinced that the subject is most valuable for classes in schools of the blind." See Bird-Lore, Vol. XIII, No. 6, p. 316.—A. H. W.]

FEMALE RED-WINGED BLACKBIRD, NEST AND YOUNG
Photographed by E. Jack

THE CHESTNUT-SIDED WARBLER

By T. GILBERT PEARSON

The National Association of Audubon Societies

EDUCATIONAL LEAFLET NO. 85

Among the most charming birds in the world are the members of that group classified as the family of Wood Warblers. There are about one hundred and fifty-five known species, and they are found in no other country but America. Seventy-four kinds occur in North America, and fifty-five of these have been recorded in the United States.

They are small birds, the majority measuring rather less than five and one-half inches from bill-tip to tail-tip. They are birds mainly of woods and thickets, a few only venturing into open country. The Warbler's bill is longer than that of most small birds, and is well adapted for seizing the soft-bodied insects upon which it so largely preys.

One of the most common members of the family in the Eastern States is the Chestnut-sided Warbler. The general appearance of the male is that of a particularly trim little bird with olive-green back and bright yellow crown; the under parts are lighter, and the sides are marked by deep chestnut—that is, this is the way the male looks in spring. At this season the female is quite similar, although its colors are duller. In the fall and winter the plumage presents a very different appearance. The upper parts then are yellowish olive-green, sometimes with faint streaks on the back. The deep-chestnut of the sides has given way to a few spots or patches of this color.

In seeking the Chestnut-sided Warbler, one should go to woodlands that have been cut over and grown up in bushes. There are found the conditions which this bird dearly loves, and in such a situation one may pass a whole forenoon and seldom be out of sight or hearing of one or more of them.

The nest is made of strips of bark, soft dead leaf-stems, and similar material; it is lined with tendrils and rootlets. Usually the nest is from two and a half to three and a half feet from the ground. Rarely have I found one so situated that it could not readily be reached by the spring of an agile house-cat, and there is much evidence to show that many are pulled down every year by these feline hunters.

It is commonly reported that as many as five eggs are deposited in the nest before the bird begins sitting, but fully three-fourths of those nests that I have found contained only four eggs. They are white, with numerous brown markings of various shades—some distinct, others more or less obscure, as if the inside of the shell had been painted and the color was showing through. The spots and blotches are gathered chiefly in a wreath about the larger end.

CHESTNUT-SIDED WARBLER

Order—Passeres
Genus—Dendroica
Family—Mniotiltidæ
Species—pennsylvanica

National Association of Audubon Societies

They are pretty, dainty little objects, as is the case with all Warblers' eggs. In size, they are about two-thirds of an inch long, and half an inch in diameter at the largest place.

In the latitude of Boston, fresh eggs may usually be found late in May or in the first week of June.

The Chestnut-sided Warbler feeds almost exclusively on insects. John James Audubon wrote that once in Pennsylvania, during a snow-storm in early spring, he examined the dead bodies of several, and found that their stomachs contained only grass-seeds and a few spiders. The birds were very poor, and evidently were in a half-starved condition, which would probably account for the fact that they had been engaged in such an un-warbler-like act as eating seeds. Ordinarily this bird is highly insectivorous, and feeds very largely on leaf-eating caterpillars. It also collects plant-lice, ants, leaf-hoppers, small bark-beetles, and, in fact, is a perfect scourge to the small insect-life inhabiting the foliage of the bushes and trees where it makes its home. Sometimes the birds take short flights in the air after winged insects. It will thus be seen that the Chestnut-sided Warbler is of decided value as a guardian of trees, which is reason enough why the legislators of the various states where the bird is found were induced to enact the Audubon Law for its protection.

All birds that depend so much on insects for their livelihood as does the Chestnut-sided Warbler are necessarily highly migratory. By the middle of September nearly all have departed from their summer home, which, we may say roughly, covers the territory of the southern Canadian Provinces from Saskatchewan eastward, and extends southward as far as Ohio and New Jersey. They are also found in summer along the Alleghany Mountains in Tennessee and South Carolina. Most of the migrants go to Central America by way of the Gulf of Mexico, and only a comparatively small number travel to Florida and the Bahama Islands.

The song of the Chestnut-sided Warbler is confused in the minds of some listeners with that of the Yellow Warbler. Mathews says the song resembles the words, "I wish, I wish, I wish to see Miss Beecher."

Mr. Clinton G. Abbott, writing in Bird-Lore in 1909, told most entertainingly of the fortunes of a pair of these Warblers and their nest, which he watched one summer. After telling of finding a nest from which all the eggs had been thrown but one, and in their place had been deposited two eggs of the Cowbird, he says:

"The nest was found at Rhinebeck, New York, on July 6, 1900, incubation having apparently just started. Four days later I discovered that one of the Cowbird's eggs was infertile; so I removed it from the nest, disappointed that I should not, after all, enjoy the somewhat unique experience of observing two young Cowbirds growing up in the same nest. It was some time during the night of July 13–14 that the first of the remaining two eggs hatched—the Cowbird's of course. The Warbler's hatched between twelve and twelve-thirty

o'clock on the 14th. The nicety with which matters had been so arranged that the young Cowbird would have just a convenient start in life over its unfortunate rival commanded at least my admiration if not my sympathy. Cowbirds must indeed be sharp nest-finders to be able to discover at short notice not only the nests of certain suitable kinds of birds, but even nests containing eggs at a certain stage of incubation!

"After the hatching of the eggs, I spent considerable time at the nest-side, and observed with interest the many pretty little incidents of a bird's domestic

A NEST OF THE CHESTNUT-SIDED WARBLER

life—the constant and tender brooding of the newly hatched young by both Warblers in turn; the never-ceasing search among the neighboring trees and bushes for small caterpillars; the delivery of the food by the male to the brooding female, who, in turn, would raise herself and pass it to the young; the careful cleansing of the nest; and many other intimate details of the birds' loving and happy lives. When I drew aside the leaves that sheltered the nest and allowed the sun to shine upon it for purposes of photography, the mother, realizing with that wonderful instinct common to all birds which nest in the shade, the fatal effect on her babies of the sun's direct rays, would take her stand on the edge of the nest and with outstretched wings would form of her own body a living shield for the comfort and protection of her young. Although herself in evident distress from the heat, and with parted mandibles continually gasping for air, she would remain in this position as long as the sun shone upon her, only stepping aside occasionally when a well-known signal announced that her husband had arrived with a meal for the little ones. It was a beautiful picture of parental devotion.

"As the young birds began to grow, the Cowbird not only maintained, but rapidly increased its lead over its small nest-mate. At every visit of the parent bird with food, its capacious gullet could be seen violently waving aloft and almost completely hiding the feeble little mouth of the Warbler, whose owner was pathetically doing its best in a dumb appeal for food. The Cowbird's appetite seemed never to be satiated and, unlike most nestlings, which relapse after a meal and give their brethren the next chance, he seemed ready for every fresh opportunity; and, by reason of his superior display, he usually succeeded in obtaining the coveted morsel. However, the young Warbler did manage to get an occasional portion, and I had strong hopes that he might reach maturity. For I realized that a Chestnut-sided Warbler's usual laying is about five eggs, and that therefore some four eggs must have been made to give place to the two Cowbird's. Hence the young Cowbird in the nest might reasonably be granted the room and food of four young Warblers. More than this I hoped he was not getting.

"On July 18, at 3.30 P.M., when the birds were about four days old, I took them from the nest to compare their sizes. I replaced them in the nest, but that was the last I saw of the poor little Warbler. When I returned at 5 P.M., the Cowbird was in sole and triumphant possession of the nest. Just what became of the Chestnut-sided Warbler will never be known, but my theory is that, weakened by lack of sufficient food, the little fellow at last became too feeble to raise himself at all, and was crushed to death by the Cowbird's gross body. The parent birds, returning and finding the little corpse in the bottom of the nest, were no doubt impelled by their instinctive sense of cleanliness to carry it to a distance; for the most careful search over a large area beneath the nest failed to reveal any sign of the missing bird, thus proving that it had not fallen from the nest nor been forced out by the Cowbird.

"The Cowbird now had things all his own way and, there being no one to dispute his right to all the food, he grew with amazing rapidity. The dainty little cup of a nest, never built to accommodate such a monster, was soon completely forced out of shape. His body then protruded beyond the lower rim of the nest, and the ground underneath became littered with droppings, quite baffling the cleanly, sanitary instincts of the Warblers.

"The Cowbird, now almost twice as large as his devoted foster-parents, rises with hideous chitterings of delight to receive an ever-acceptable meal. I visited the nest at 7.30 A.M., on July 26. As I walked home to breakfast, I resolved that in the interests of justice I ought to put an end to that Cowbird, as a murderer and a menace to the welfare of birddom. But when I returned to the spot, about 9 A.M., he had escaped me; the nest was empty, my bird flown. No doubt, if I had searched and listened, I should have heard him shouting for food not far away; but my spirit of vengeance was only half-hearted at best, and so I left him, a criminal abroad, to be the parent, I suppose, of others as bad."

The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, Secretary

Address all correspondence, and send all remittances for dues and contributions, to the National Association of Audubon Societies, 1974 Broadway, New York City.

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Any person, club, school or company in sympathy with the objects of this Association may become a member of it, and all are welcome.

Classes of Membership in the National Association of Audubon Societies for the Protection of Wild Birds and Animals:

$5 annually pays for a Sustaining Membership
$100 paid at one time constitutes a Life Membership
$1,000 constitutes a person a Patron
$5,000 constitutes a person a Founder
$25,000 constitutes a person a Benefactor

FORM OF BEQUEST:—I do hereby give and bequeath to The National Association of Audubon Societies for the Protection of Wild Birds and Animals (Incorporated), of the City of New York.

A CASE IN POINT

In the last issue of BIRD-LORE were reproduced some photographs of a ruined White Ibis rookery, which Dr. Herbert R. Mills stated had been destroyed by "sportsmen" who had wantonly shot the birds. Such raids on the bird-life of Florida have been made frequently by northern visitors to the state. A striking example of this habit has just come to public notice.

In the February issue of *Scribner's Magazine*, a writer, after referring to the pleasures he enjoyed while catching tarpon at Bocagrande, says:

"Birds were always flying around the boat; Gulls, Man-o'-wars, Pelicans, and when we weren't fishing we were potting at them with a Winchester .22. The Big Chief was a wizard with a rifle, and even skimming Swallows were none too swift or too small for his Deadeye Dick precision of aim. After cutting down a sailing Man-o'-war, two hundred yards above the water, and surely three hundred yards away, he formed a Man-o'-war's Club; any body who killed one flying was entitled to membership."

All these birds are protected by the laws of Florida and at least one of them by the United States Migratory Bird Law. There is no open season for any of them. The man who wrote this is not a poor, illiterate inhabitant of the southern swamps, who killed the birds to sell their feathers for a few dollars with which to help feed his family; but is a successful writer of novels and stories, many of which you and I have bought and read with pleasure. Incidentally, by our purchase of his work, we have aided in swelling his royalties, thus enabling him to go to Bocagrande, and doubtless elsewhere, where he might amuse himself from time to time in the very delectable sport of shooting harmless non-game birds. This man is John Fox, Jr.

As a result of the work of this Association, the Pelican colonies in Charlotte Harbor near Bocagrande have been made Federal bird-reservations. While attempting to protect one of them, Columbus G. McLeod, one of our wardens, had his head chopped open and his body sunk in the harbor by persons who did not approve of his zeal. These birds—the wards of the Government, the birds that the Audubon Society's members have been giving money to protect, and the birds for which one good man has given up his life—these birds afford targets for Mr. John Fox Jr., and his friends; and

Scribner's Magazine, doubtless greatly pleased at the privilege of being allowed to publish an article from the pen of a gentleman so distinguished, kind and altruistic, has taken these boasting sentences and printed them, regardless of the fact that the magazine will go into thousands of homes to be read by young men who may later go tarpon-fishing in the limpid waters about Bocagrande, and who might be inspired to follow the example of the noble deeds of this celebrated novelist.

We are glad to reproduce here an open letter written to him by Doctor William F. Blackman, President of the Florida State Audubon Society:

"*Dear Sir:* As a tarpon fisherman, holding the record in a recent year for the largest fish taken in the state, I was much interested in your article in the February Issue of *Scribner's Magazine*, on 'Tarpon Fishing at Bocagrande.' But when you told your readers that you and your companions beguiled your leisure, on this occasion, by 'potting with a Winchester .22' at the Gulls, Man-o'-wars, Pelicans, and skimming Swallows which surrounded your boat, you surprised and pained and disgusted me beyond words.

"You doubtless knew that all these birds are protected by the laws of Florida, and some of them by the Federal laws also; your action was deliberately criminal; it was also unspeakably puerile, wanton, cruel, and vulgar.

"The citizens of Florida welcome tourists from other states; we are happy to share our excellent fishing and shooting with them within legal and decent limits, which, I am glad to say, the great majority of those who sojourn among us carefully and cheerfully observe; but we do not propose to allow our plumage and insectivorous birds to be slaughtered to provide fun for thoughtless and reckless gunners whether residents or visitors.

"You are too foxy to say whether you yourself succeeded in killing any of these birds, but I hereby give you notice that if you ever again set foot on our soil, and I am apprised of the fact, I shall see that you have an opportunity to tell your story in the courts. If proof can be had of your personal guilt, you will be punished to the full limit of the law, in both the state and federal jurisdictions, for a misdemeanor so unsportmanlike and inexcusable."

A FEEDING-SHELF FOR BIRDS ERECTED BY JUDGE HARRY L. CRESWELL, GRAND RAPIDS MICHIGAN

PHOTOGRAPHING WATER-FOWL

To watch at close range the wildfowl accumulated on the Ward-McIlhenny reservation in the marshes of Louisiana is the privilege of a lifetime.

Mr. Herbert K. Job not only had this privilege for about six weeks during last December and the early weeks of January, but he procured a remarkable series of photographs of water-birds that make that region their winter home. From the moving pictures that he made the Association now has a thousand-foot reel, showing Pintails, Teals, and other Ducks, as well as Boat-tailed Grackles and Coots.

To ornithologists, the most interesting pictures he obtained were those of the Blue Geese. The chief summer home of these birds is supposed to be on the islands north of the American continent, and most, if not all of them, pass the winter in the marshes of Louisiana. I know of no case heretofore where they have been photographed in large numbers at close range.

The accompanying illustrations were all made by Mr. Job on this expedition, and will give some idea of the results of his skill and patience in the use of a moving-picture camera.

PHOTOGRAPHED FROM THE WINDOW OF A CABIN ON THE WARD-McILHENNY RESERVATION

WHEN ALARMED, THE DUCKS WERE THE FIRST TO TAKE FLIGHT

AN INTERESTING COMPANY OF COOTS

PINTAILS, TEALS, AND COOTS, PHOTOGRAPHED FROM CABIN WINDOW

PINTAILS, TEALS, AND BOAT-TAILED GRACKLES, PHOTOGRAPHED FROM CABIN WINDOW

BLUE GEESE AND A FEW GREATER SNOW-GEESE "GRAVELING" AT VERMILION BAY, LOUISIANA. MR. JOB WAITED FIVE DAYS IN A BLIND TO GET THESE PICTURES OF GEESE

BLUE GEESE AND SNOW-GEESE ALIGHTING. VERMILION BAY, LOUISIANA, JANUARY 3, 1916

THE MARSH ON FIRE

BIRDS AND THE COLD SPELL

On the morning of February 5, 1916, there was received at the office of the National Association the following telegram:

"The State Game Warden, Topeka, Kansas, reports his state covered with three to nine inches of sleet and ice. Birds starving by wholesale. State organizing campaign for food. Can you assist? Immediate action necessary. E. W. Nelson, Acting Chief, Biological Survey."

We immediately telegraphed to the State Game Warden of Kansas offering $200 for the purchase of grain. Shortly afterward the following telegram was received from Honorable Carlos Avery, State Game Commissioner of Minnesota:

"Conditions critical for Quail on account of unprecedented depth of snow and extreme cold. Funds insufficient to care for them adequately. Can you include Minnesota for appropriation for this purpose?"

This second call for help, together with word received from other directions, indicated that the snow and ice-cap had extended generally over a number of the northern states of the Middle West. We at once wired to the officials of some of the organizations in several of these states, and also sent telegrams to thirty-five members of the Association, telling them of the situation and asking for contributions to be used in the purchase and distribution of food for the birds. Many of the members immediately responded, and in a remarkably short time we had collected and telegraphed to the Cleveland Bird-Lovers' Association $200, to the President of the South Dakota State College $200, and to the Minnesota Game Commission $600.

We also telegraphed the Postmaster General in Washington asking that rural mail-carriers in Minnesota, Kansas, and Nebraska be authorized to distribute grain to be supplied them for the purpose. The Third Assistant Postmaster General at once gave the instructions requested.

Mrs. Elizabeth C. T. Miller, President of the Cleveland Bird-Lovers' Association, sent notices to all on her large membership list, called upon the people generally through the press, and set other movements in operation looking to the good of the birds.

The South Dakota State College is the largest educational institution in the State, enrolling over eleven hundred members. President E. C. Perisho, who is a lover of wild birds and, incidentally, one of the most influential and public-spirited educators of the West, called a mass meeting of his students and laid the situation before them. The following is from one of his letters, and will give some idea of what resulted.

"We are doing everything possible at this end to save the birds of South Dakota. I thought perhaps you would be interested to know that our organization for this purpose is as follows:

"1. The State College has written to four hundred or five hundred boys and girls, members of the Boys' and Girls' Clubs of the state, asking them to scatter grain and make some protection to save the Field Sparrows, Quails, and Prairie Chickens especially.

"2. The entire extension force of the College, including all the short-course demonstrators, district men, etc., have been written to and are coöperating with us.

"3. All the county agents of the state are interesting the school children of their counties, and a number of farmers and the rural mail carriers.

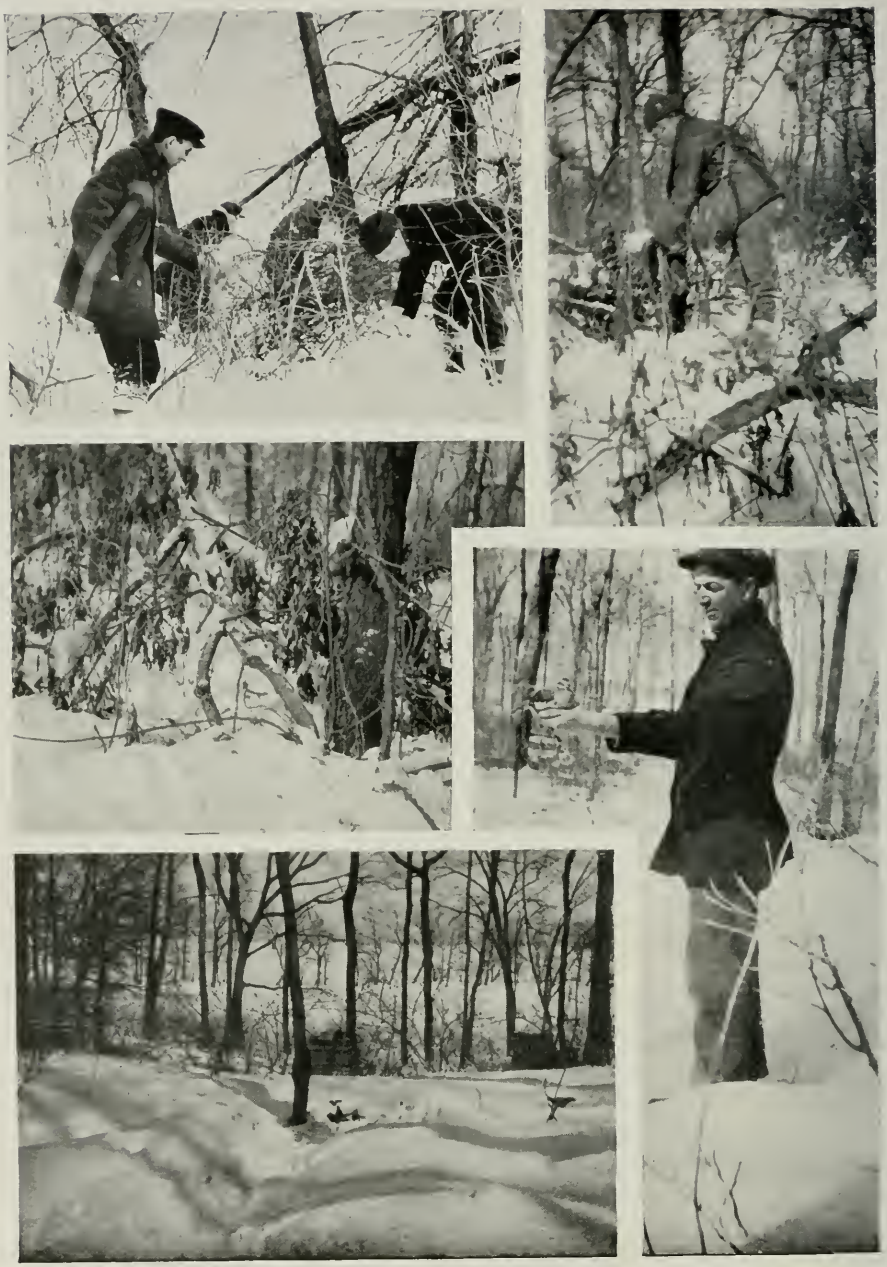
"4. The commercial clubs in all the large towns of the state, and the smaller ones where grain is most needed, have been written to, asking for their immediate coöperation.

"5. All the state institutions, five besides our own, have been asked to help in this matter.

"6. A number of high schools and township schools, etc., have been asked to help.

"7. Between one and two hundred farmers, well distributed over the state have had personal letters.

"Money in small amounts has been promised to county agents, commercial clubs, etc. I met a number of the young men of our college today and talked to them about the situation, and asked for their coöperation in writing to their homes, etc. Those most interested in the



SAVING THE QUAIL IN MINNESOTA

1. Locating nesting-places of Quails under brush and broken tree-tops. 2. Placing grain under brush just occupied by a bunch of Quails. 3. Fifteen Quails were found here on February 13; food was left for them. 4. Some Quails become weak from lack of food, are easily caught, and sit contentedly in one's warm hand. 5. Several Quails near the foot of a tree, and one (at the right) running.

work went out, after the meeting, and had a picture taken. I will send you this photograph as soon as it is developed."

In Minnesota, the "Save the Quail Association" was immediately formed by the sportsmen of St. Paul and vicinity. Mr. Carlos Avery put the State Game Wardens to work, and the matter was given wide publicity. An immense work was done throughout the state in the way of feeding birds. Mr. Avery has sent in a large number of photographs, showing the men actually at work for the relief of the birds. The method of feeding the Quails to locate the covies, scrape the snow away, and put out food.

The heavy snow and extreme cold prevailed over a large area of the northern United States, and more work was probably done to feed the birds this winter than ever before under similar conditions. Many of the State Game Commissions have funds for this purpose, and have been very active.

Quails and Pheasants are known to have suffered much in Oregon and Washington. A quaint little incident is reported of pheasants in Washington, sent us by a correspondent in British Columbia. He relates that the Pheasants during the time of deep snow not only came familiarly about barnyards, but were fond of perching on the backs of the hogs in order, apparently, to warm their chilled feet.

There have been some losses in New England, and even from New Jersey reports reached the office of the toll of bird-life that the heavy snow had taken.

STUDENTS OF THE SOUTH DAKOTA STATE COLLEGE, AFTER LISTENING TO AN ADDRESS BY PRESIDENT E. C. PERISHO, ON THE NEED OF FEEDING BIRDS IN WINTER. NOTE THE DEPTH OF THE SNOW.

FLORENCE MERRIAM BAILEY

When George Bird Grinnell coined the term "Audubon Society," and started the Audubon Movement, in 1886, one of the first to respond to the call and to go actively into the work was Miss Florence Merriam, who, with Miss Fanny Hardy—now Mrs. Eckstorm, author of several bird-books—in March, 1886, organized the Smith College Audubon Society. Soon afterward Miss Merriam assumed the duties of a local Audubon secretaryship, in northern New York, and also secured local secretaries in several neighboring towns.

In 1897, when the Audubon Society of the District of Columbia was organized, she was one of its chartered members. For many years, as Mrs. Florence Merriam Bailey, she has been an active member of its executive committee, and, among other duties, has had charge of the annual spring bird-class, one of the most important features of that Society. That her interest in the work is deep and sympathetic to an unusual degree may be shown by a quotation from a letter that she wrote to the California Audubon Society on the occasion of its organization:

"Wherever you go, study the birds and tell your friends of them. Point out to them the chaste beauty of your exquisitely tinted waterfowl; let them see the glowing splendor of your Tanagers, the flashing jewels of your Hummingbirds. Take them to the fields, that they may listen in rapture to the rare voice of your Meadowlark; take them to the deep canyons filled with the flute-like notes of the Canyon Wren; and to the fir forests on the mountain-sides, where their souls will be stirred by the uplifted song of the Thrush.

"By knowing the birds personally, you will bring to your Audubon work the enkindling spark of enthusiastic friendship. In all phases of your work, for yourselves, your friends, your birds, and your children, you have my hearty interest and good wishes. For fifteen years I have been waiting for you to take up the cause of the California birds, and for many years I have been working with the children of the West on my heart. Knowing this, you may well believe that I wish your beautiful work an earnest God-speed."

Mrs. Bailey's natural girlhood's interest in wild birds was greatly quickened by dwelling in a home in which scholarship and a love of scientific accuracy were taught daily; and she had the added advantage of living in a region of northern New York well supplied with bird-life. In a recent letter she wrote: "Having been brought up on Coues's 'Key,' and trained by my brother, Dr. C. Hart Merriam, on leaving College in 1886 I began doing careful field-work." Since that day, no woman has studied the wild birds of America so systematically, so thoroughly, and so carefully as she. The amount of field-work she has done is perfectly astonishing, and probably few women have spent so many days in the wilds, or so many nights under canvas, as has Mrs. Florence Merriam Bailey. Her work, partly conducted in company with her brother, Dr. Merriam, and her husband, Mr. Vernon Bailey, has been carried on not only in eastern and southern states and in the Bermudas, but also in Arizona, Oregon, California, North Dakota, Texas, Utah, and New Mexico.

As a teacher of others, she has given bird-talks and conducted field-classes in bird-study in various parts of the country, and for thirty years her name has been before the public as a writer of popular and scientific articles. The titles of no less than seventy communications published in *The Auk*, *Bird-Lore*, *The Condor*, *Forest and Stream*, *The Outlook*, *Popular Science*, *The American Agriculturist*, and elsewhere, have come to my attention. Her first book, "Birds Through An Opera Glass," was published in 1889. This was followed by "My Summer in a Mormon Village," 1895; "A-Birding on a Bronco," 1896; and "Birds of Village and Field," 1898.

Her largest and most valuable con-

FLORENCE MERRIAM BAILEY

tribution to the literature of ornithology is her "Handbook of Birds of the Western United States," first published in 1902. From the day of its appearance, this was hailed as the most practical and useful book on our western birds that had ever been published, and for many years to come it will be regarded as the standard work on the subject. No serious student of bird-life in the western United States would think of being without this valuable book on his study-table.

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THE VIRGINIA GAME BILL PASSES

By a vote of twenty-four to nine, the Senate of the Virginia Legislature has passed the bill of the Farmers' Union and the Audubon Society for the establishment of a Commission of Fisheries and Game. The bill was signed by the Governor on March 13, 1916. Thus ends a fight which the Audubon Society has led in the Virginia Legislature, session after session, for many years.

Mr. M. D. Hart, President of the Virginia Audubon Society, and others who have labored hard for the successful passage of this measure, are to be congratulated. Now, at least, we may hope for some good bird-and-game protection in that state, for the commissioner will have power to employ wardens, and will have funds with which to pay them.

The methods of selecting the local wardens is rather unusual: From a list of ten names, submitted by the boards of supervisors of the counties and the councils of cities, the commissioner will select wardens—one for each county and city in the commonwealth. In communities of less than 20,000 inhabitants these officers will be paid a salary not to exceed $50 a month. In more populous communities their monthly pay will not be in excess of $60. Special wardens may be appointed to serve for not more than $3 a day. The commissioner or any of his wardens may serve original processes as sheriffs and constables. Every hunter who leaves his own premises or those adjoining his will be required to obtain from the commissioner a hunter's license. Residents will be charged $1 for the privilege of hunting in their county, and $3 for a state range. Non-residents may hunt anywhere in Virginia on payment of $10.

The victory in Virginia leaves only two states in the Union that have no game-warden system. These states are Florida and Mississippi, which still vie with each other for the honor of being the Rip Van Winkle state in the matter of bird-protection.

SPRING ARRIVALS LOOKING FOR HOMES

From a drawing by Walter M. Dunk

NOTES FROM THE FIELD

Birds Beautifying Cemeteries

Some time ago, the Secretary happened to visit a suburban cemetery, where landscape-gardening and sculptural art had done what they could to make the scene beautiful and comforting, but he was impressed by the absence of singing birds. Alien Sparrows were chattering, and the gurgling of a Grackle was heard in the distance, but none of the sweet voices and pretty forms of the native birds charmed the ear or gladdened the eye of a visitor. This seemed strange, for the varied trees and shrubbery, with sunny spaces among them, quiet and guarded against noisy intrusion, would be exceedingly attractive and favorable to bird-life; and it occurred to him that in no place would an invitation to the birds to make themselves at home in summer be so likely to be accepted; nor could anything be more appropriate than their cheerful presence. They will prove useful, too.

These thoughts induced him to write a brief essay, entitled "Cemeteries as Bird-Sanctuaries," which has been published by the National Association as Circular No. 2, and distributed to many persons likely to be interested. The response has been most encouraging. Associations and individuals all over the country have written for this circular, and are taking measures to furnish cemeteries with shelters, nesting-boxes and feeding-stations for birds under instruction from the Association. The great Forest Lawn Cemetery near Omaha, for example, is putting up 100 nest-boxes as a beginning. The Rosehill Cemetery and others about Chicago are undertaking similar enterprises, and the Cemetery Beautifying Association of San Francisco is planning this addition to its methods of making more attractive the resting-place of the dead. *Blue Bird* announces that the Lake View Cemetery at Cleveland, Ohio, will erect many feeding-tables and nest-boxes, in its grounds. The matter has been taken up by the Lexington Kentucky Audubon Society. Other instances might be mentioned.

It is greatly to be hoped that many others will follow their example. The movement we think is worth while, for the sake of humanity as well as for the birds.

The Oregon Audubon Society

The Oregon Audubon Society has recently established headquarters in the Young Men's Christian Association building, in Portland. The room occupied by the Society has been tastefully decorated with pictures, and contains cabinets of specimens for study. It is planned to give lectures regularly on Saturday evenings.

Mr. William L. Finley, President of the Society, and the Pacific Coast field-agent for the National Association, in company with Mrs. Finley, has this spring been spending several weeks in the East, where he has been constantly engaged in giving lectures illustrated with moving pictures of sea-birds, Sage Grouse, sea-lions, cougars, black bears, antelopes, and other interesting forms of western wild life.

Work Along Columbia River

The Federation of Women's Clubs in the State of Washington has been notable among such organizations for that practical interest in bird-life which arises from an appreciation of their usefulness as well as their beauty. It has recently testified to this most substantially by becoming a member of this Association. Last year, and to a less extent in the previous year, the Federation was represented largely at the State Fair by an exhibition that was called the "Bird Court," in which all sorts of ornithological things were displayed to great advantage. The success of these exhibitions was due largely to the wisdom and energy of Mrs. G. R. Pike, of North Yakima, who has been indefatigable in her efforts to spread the study of birds in the schools. She has been traveling and

lecturing throughout the state for some time, under the auspices of the State Federation, which has supported this agency generously. The National Association has coöperated in all these matters, and feels that it is abundantly rewarded by results. It has now enabled Mrs. Pike to extend her work, and it anticipates still larger results in the organization of Junior Classes, and in the stimulation of a general interest in the cause throughout the Columbia Valley.

Feather Importation In Canada

It may not be generally known to the readers of Bird-Lore that, immediately following the passage of the Tariff Act in Washington, on October 3, 1913, which prohibited the importation of feathers to this country, the Canadian Parliament, largely through the efforts of Dr. C. Gordon Hewitt, passed a somewhat similar measure. The Canadian law prohibits the importation of:

"Aigrettes, Egret plumes, or so-called Osprey plumes, and the feathers, quills, heads, wings, tails, skins, or parts of skins, of wild birds, either raw or manufactured; but this provision shall not come into effect until January 1, 1915, and shall not apply to the feathers or plumes of Ostriches; the plumage of the English Pheasant and the Indian Peacock; the plumage of wild birds ordinarily used as articles of diet; the plumage of birds imported alive, nor to specimens imported under regulations of the Minister of Customs for any natural-history or other museum, or for educational purposes."

Allan Brooks a Soldier

Allan Brooks, the artist, many of whose colored pictures of birds have appeared in Bird-Lore, is with the English Army "somewhere in France." In the summer of 1915 he wrote the office that he would not be able to do further work for the Association for some time, as he was going to Europe to study. Almost immediately after his arrival in England war broke out. He at once returned to Canada and enlisted in a company at his home in British Columbia. He has been promoted from the rank of Lieutenant to that of Captain. Last December, when Captain Brooks had attained the distinction of the longest continuous trench service of any officer of the Canadian army, he was offered a more restful position behind the lines, but he declined it.

In a letter received by one of his friends a short time ago he stated that he had thus far escaped injury with the exception of deafness in one ear, as a result of a shell-explosion; and that, if he survived the war, he would return to America and hoped to paint better pictures than before.

Deer-Killing Dogs

A lady writes from a village in northern New York of the evil of loose dogs in rural communities; and of her care for winter-birds:

"On Sunday morning, January 23, two dogs chased a deer (a young doe), that strayed down from the mountains, and attacked it most viciously until it sank exhausted and wounded on the grounds of the summer home of the church of the Heavenly Rest, of which my husband is gardener and caretaker. He and my son rescued the deer from the dogs, and a neighbor notified the supervisor, who gave permission for its removal to a barn, awaiting the arrival of the game warden. My three children are members of the Audubon Society, and are greatly interested in all wild things. They are heart-broken about the deer, and we try to protect everything wild that comes our way. We have many wild birds around our house, which we coaxed around by putting little houses in the branches of nearby trees, and putting crumbs and scraps in them. We also fixed some branches of hemlock on the windowsill of our dining-room, on which my husband ties pieces of suet, doughnut, bones, and pieces of a pudding I make especially for them, of suet, currants, raisins, bread-crumbs, and scraps of meat; and oh, how they enjoy it!".—Mrs. John W. Payne.

1. SAGE THRASHER
2. MOCKINGBIRD
3. CATBIRD
4. BROWN THRASHER

(One-half natural size)

Bird-Lore

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DEVOTED TO THE STUDY AND PROTECTION OF BIRDS
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

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The Chipping Sparrow

By NEWTON MILLER, Norton, Mass.
With photographs by the author

THAT this would be a dreary old world without birds has been well said. They have come to be an integral part of our lives, largely from the esthetic point of view. The conception, however, that a bird's life is all song and sunshine is misleading to say the least, but it is only comparatively recently that any serious attempt has been made to determine the actual work of the songsters. Such is the object of this brief chapter from the lives of a pair of Chipping Sparrows, presenting a glimpse, only, into their domestic affairs.

These birds chose, at the end of May, a nesting-site in an evergreen down at the corner of the garden, and early in June a dainty structure of rootlets, lined with a liberal amount of horse-hair, was swaying among the twigs of the larch, not more than fifteen feet from the ground. In due season it was made the recipient of three bluish green eggs, scarcely more than a half inch in length, with brownish black specks on the larger ends. Incubation followed anon, and on the morning of June 25 two hatched; the third proving to be infertile was subsequently ejected.

A desire to see all that transpired in and about the nest led to an arrangement of mirrors, which permitted the observer to see into the nest and also its immediate surroundings.

This simple apparatus was soon in readiness, but the birds objected to it so strongly that we removed it for the day. On the morrow it was deemed best to start with the mirror far out on the limb, and then at intervals to move it a little nearer the nest, thereby allowing the old birds to become accustomed to it gradually. This scheme worked, and by night the mirrow was in place. All fear of the glass disappeared on the following day, and no attention was paid to it except when one of the Sparrows tried to drive away his image in it.

Thus with the birds fully reconciled, the observer, armed with a pair of

field-glasses, took his place in the shade to learn some of the ins and outs of the Chipping Sparrows' home-life. The young received their first food on the morning of June 26, and the feeding was repeated about every half hour throughout the day. The food consisted always, as far as could be determined, of small green caterpillars taken from the larch or garden. The next few days were mere repetitions of this one, except that the feeding-periods became far more frequent,—one every seven minutes on the average throughout the working day of fifteen hours. Also, larger morsels of food were added to the *menu*. Sometimes an insect proved to be too large; then it was mauled on a limb or picked to pieces before being returned to the youngsters.

NEST OF CHIPPING SPARROW

All seemed to go well until the night of June 29, when a bird tragedy was enacted resulting in the death of one of the young. The single remaining offspring did not seem to require care of both parents, whereupon the female shirked all responsibility and began the construction of a new nest in the opposite side of the tree. The male was not discouraged in the least, but went about his duties with such renewed vigor that his charge very seldom called for food. Once in a while it clamored for more just as he left after feeding. The female, on the other hand, returned to the first nest very few times, and then without any apparent interest in it. Likewise the male did not interfere with the operations in the opposite side of the tree; but down in the garden, working over the lettuce together, and in various other ways, it was plainly evident that they were still mates.

The condition now existing in this bird family gave us an unusual opportunity to obtain data on the activities of a single adult and nestling. Consequently these two were followed with much interest as long as the young re-

mained in the nest and for a few days afterward. A summary of a day with them will probably give the best idea of the work done by the male, also an index to the almost unsatiable appetite of the fledgling. We chose July 7, four days before the young left the nest, for this purpose.

One of our party arrived at 3.50 A.M. to find the birds already astir about the second nest, the female going about quietly while the male gave vent to his feelings in song which was cut short a half hour later by a chirp from the nestling that sent him scurrying off to the garden in search of food. The young received the first portion of its breakfast at 4.30.

CHIPPING SPARROW AT NEST

Beginning at 3.50 A.M. and ending at 7.15 P.M., this bird-day comprised fifteen hours and twenty-five minutes. By the end of the hour following the first feeding, the young had been fed eighteen times, and a decrease in the number of feedings per hour followed until the low mark of four was reached during the noon hour and again at the end of the period terminating at 3.30 P.M. A decided increase began at the close of this period and was maintained up to 7.15 when the fledging received its last visit and food for the day. The

MALE CHIPPING SPARROW FEEDING HIS ONLY YOUNG

male departed at once, leaving the young to spend the night alone. During this long day of fifteen hours and twenty-five minutes the nestling received food 130 times, once every seven minutes on an average. The bill-of-fare included fifty caterpillars, eight beetles, three moths, and one grasshopper while the substance of sixty-eight feedings could not be determined.

We have said nothing of what the male ate. Surely he required as much as the fledging, undoubtedly more. If he ate only as much as his offspring he was

CHIPPING SPARROW AND YOUNG, AFTER FEEDING

instrumental, during a single day, in destroying 260 insects or their larvæ, taken almost exclusively from the garden. Such a day's work might be considered extraordinary, but not so. Usually the young number three to five, which means that the parents must double the activity of the one under consideration, or the nestlings must go without sufficient nourishment. The latter is undoubtedly the correct assumption; otherwise, with a brood of five, each parent would be obliged to visit the nest 325 times per day, i. e., once every 2.7 minutes, which is hardly probable. In the case of our Chipping Sparrows the male provided the fledgling with food, on an average, once every 4.5 minutes during the first four hours of the morning, a rate which if maintained throughout the day would have totaled 200 feedings. If this be the maximum (a number which the most diligent little Wood Pewee does not exceed) then it follows that even a family of four young are put on short rations or that one or two are nourished abundantly at the expense of the others, which explains, in part, the discrepancy in size so often observed among members of the same brood.

It is quite evident that a nest of five will keep the two adults busy. How many insects then should a family of seven consume per day? We can answer this only by making a number of assumptions, each or all of which may be far from the truth. Let us assume (1) that each of the old birds will eat as much as

the fledgling we observed; (2) that each of the parents will feed the young 200 times per day; (3) that only one insect is brought at a time (an underestimate since two and three larvæ or small insects were seen given at a single feeding). We thus arrive at the conclusion that a pair of Chipping Sparrows with five young will destroy no less than 660 insects per day. It is unnecessary to moralize upon the effect of a brood upon a garden during the sixteen days the young are in the nest and for the half-dozen or more they remain in the vicinity. Granted that our estimate is one-third too high, still we have about 10,000 'bugs,' including cutworms and other noxious insects, removed chiefly from the garden and lawn during this period. Such I consider a conservative estimate of the work of these birds for less than a month, which has a direct economic value to man.

The Chipping Sparow is only one among a large number of birds which we are learning to appreciate for their work as well as for their songs and plumage. It is not surprising then that, with a knowledge of their economic importance, a wave of protest against their destruction is sweeping over this country. It does seem, in this connection, that for birds of the Chipping Sparrow type, which nest in the vicinity of dwellings, drastic measures should be taken to eliminate their two chief enemies—the cat and the English Sparrow.

VEERY BROODING
Photographed by Arthur A. Allen, Ithaca, N. Y.

SHORT-BILLED MARSH WREN NEAR NEST
Photographed by A. A. Allen, Ithaca, N. Y.

LONG-BILLED MARSH WREN AND ITS NEST
Photographed by Francis Harper, Ithaca, N. Y.

TWO MARSH WRENS

Pete: The Story of an Adopted Robin

By W. H. MUNSON, Winona, Minn.

DURING the first week after I adopted him, Pete accompanied me to and from the laboratory each day; and during that time he learned to pick up grains of sand, to flap his wings in mimic flight, to come to me at call, to drink from a dropper. During the next week he learned to recognize the difference between the appearance of the food-paddle and that of the dropper. When he had had enough food he steadfastly refused any further attention to the food-paddle, but when the dropper was presented he would eagerly stretch out his neck to drink. He also flew each day during the second week, always returning to me after each flight.

He took especial delight in a dust-bath, but much preferred the road-dust to the dry earth of the garden. When he wanted his bath he would go through some of the motions in his cage, and then stand and peep till I took him to the road, where he would revel for half an hour or more.

Pete is a tyrant. If we do not attend to his wants immediately, his tender little peep turns to a shrill staccato note that spells insistence in every sound. Yes, he is a spoiled child, we know; but you must remember that he is the only one in the family, and it is true that we have tried to anticipate his every need before he even knew it.

One of his flights gave me palpitation of the heart. I took him out in the morning for his exercise, and he flew up, up, over the trees, over the house, and was gone out of sight. Quickly I followed his general direction, but could find nothing of him. I went back to the house, put on a coat and hat, and explored the neighborhood, but he was gone beyond reclaim. A full half-hour I bemoaned my loss, and was giving up in despair, when out of the blue came a flutter of wings, and Pete alighted on my shoulder, shrilling his *peep, peep* into my ear. He was hungry and did not propose to wait another minute, nor did he. We went to the house, and no hungry child ever evinced greater satisfaction in eating than did this little bird.

Pete is a very wilful bird, and I am almost driven to say that he is intelligent. One evening I had taken him to the street for his dust-bath, but he was hungry and did not indulge himself very long. I had his food with me, and now and then he made savage little flights or runs toward it. Repeatedly I put him back in the dirt, scraped my finger around in it before him—that was the stimulus I used to awaken his instinct—but he would ruffle his feathers just a little and again dart for the food. I tossed him into the air to make him fly, for I felt that if he were hungry when he flew, he would be sure to come back quickly, but fly he would not. It was becoming dusk, so I finally fed him, and he awaited no invitation to fly; but invitations to return were in vain. He would alight not very far away, dust himself vigorously, but would not allow my close approach as he always had before. I was fearful of losing him, but I am almost

ready to think that he was paying me back. After a time he became as docile as you please. Always since, when I have refused him what he wants, he has been offish in some way or other, and never when I have treated him as he seemed to think he ought to be treated.

One noon after I had fed him and watered him, and cuddled him a little, he flew as I tossed him into the air. Over the trees and east he went, up and away till he was out of sight. Then I began his food-call, and in a few seconds he was at my feet a trustful, docile, and apparently happy bird.

Ultimately we released Pete permanently from his cage, insuring safety for the night by bringing him in at dusk.

It was a glad day for all of us when Pete learned to come to the back door and ask for food when he did not find enough in the neighborhood—for the neighborhood is his feeding-ground, and the neighbors are his friends. It was a glad day, too, when he first flew to the shelf where he was always fed. Many, many applications of the food-paddle are necessary to appease his hunger, and then he peeps for his drink. That administered, he cleans his bill on any convenient edge, and then wings his way out into the yard again.

Pete's antics touch me wonderfully. Does he really know me? Does he trust me? Young people have trusted me, and seemingly have given me a sight into their heart of hearts, and that is something to be thankful for. But here is a bird of the field, a wild thing with ages of the fear of abuse and treachery in his little breast, bound up in what we call instinct. Contentedly he cuddles in my cupped palm, and croons a little song so faint and sweet that it might charm the fairies of his native fields.

Out of the heavens that are all his for the taking he returns to perch upon my shoulder, and tell me in my ear that he expects me to feed him. He follows sometimes like a dog, and seems never so contented as when with me. He will be quiet for a long time, if I am very near; but if I leave him, he gives every sign of distress, unless I have just fed him to repletion.

Altogether, Pete is the strangest bird I ever knew, strangest in his modified instincts, strangest in his influence upon me, strangest in his every act, and pose, and note.

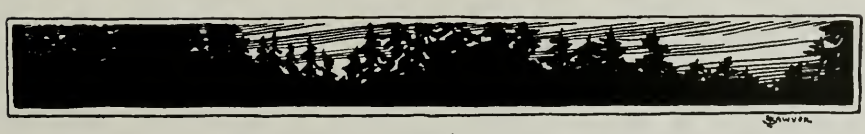
How is it? Why is it? May we have such intimate relations with God's wild things out-of-doors? And do they flee from us as from a known danger? Why, if birds may be thus tamed, may we not be surrounded with feathered songsters free to go and come at will, and yet looking to us for protection and for a part of their food, especially in times of stress?

I've stroked the sitting Thrush in her nest, handled the young when the parents were not two feet away, and unprotesting; and because of these and other similar experiences, and because of my intimacy with Pete, I am the better; and further, I hope that bye and bye, when such friendships shall have multiplied, I may spell myself man, and question not.

The Hermit Thrush

By ERNEST HOWARD CROSBY

Before the sun of June
Had bathed his forehead in the morning mist,
I rose and rambled barefoot on chill dews
That drenched the moss between squat junipers.
Above the vaulted aisle of yonder pines
The morning star was vanishing from earth,
And we gazed speechless, pines and moss and I,
Longing to cry farewell. And then God sent
A voice to speak for all our brotherhood;
For lo, at last we heard His Hermit Thrush,
The tremulous vox-humana stop o' the woods,
Let loose his pipe, like some high priest of sound
In a cathedral,—and we listened there
In thankful stillness to our inmost yearning
Transmuted into song.



A Domestic Tragedy

By JULIA MOESEL, Ithaca, N. Y.
With photographs by A. A. Allen

IT WAS early in May, 1914, when many of our feathered friends were making their first appearance in spring. Indeed, great was the anxiety to be among the first to greet the new arrivals as they returned from southern climes, and greater still was that solicitude to be able to number among them some very rare migrant or chance summer visitant.

That May morning was an ideal one for bird-study, for there was every indication of a most promising day. With expectancy reaching the highest pitch, I set out determined to see everything. Following one of the shaded paths that course the shore of a small lake on one side and a woody hill on the other, I was attracted by some faint sounds and lisping *tseeps*. In the very tree-tops, the birds were enjoying themselves. Warblers were evident: the Black-throated Blue, the Cape May, the Chestnut-sided, the Nashville, the Parula, the Black-throated Green, and the Blackburnian. But neither new nor rare species could be counted among them.

Further into the depths of the wooded hillside I ventured. A strange song greeted my ears. It was a prolonged but interrupted warble followed by a few loud notes matchless for their tenderness and cadence. It was a melodious song indeed; the song of the bird I had long vainly looked for but never had the pleasure to see—the Blue-headed Vireo.

I watched him for some time, as he flitted from tree-top to tree-top, now hiding under the dense branches of the hemlocks, then giving an occasional musical chatter, or a pretty trilled whistle, or an enchanting short warble.

The next morning, I was determined to make a still further acquaintance with my new friend, and no sooner had I entered the woods than I was greeted by the selfsame song. I began to hope that he might stay with us for the spring, but the third day he was nowhere to be found.

About ten days later, however, when I was strolling along again, gazing among the tree-tops to see that no arrival might pass unnoticed, I was attracted by a rattling sound among the leaves on the ground. A careful look convinced me that it was the Blue-headed Vireo, my old friend, no doubt. He had found a piece of waxed paper which someone had discarded and implanting his little feet very firmly on one corner, unaware of my presence, he started in a very diligent manner to tear the opposite corner into small pieces about one centimeter square. I concluded that his nest was in the process of construction. Cautiously I followed him, and much to my surprise, I found the place for his new spring home in a branch of hemlock. A rather inconspicuous place had been chosen for the site, scarcely ten feet from the ground and about twenty feet from a much-traveled path in the woods.

I watched him while he sang at his work, every now and then returning

with bits of paper which he was using to adorn the exterior, and not until then did I discover, for the first time, the female sitting on a higher branch nearby, watching carefully so that no harm might befall the nest. Fearing I might be attracting too much attention I left for the day. The following morning the birds were nowhere in sight. My first impulse was to examine the nest more closely and I ventured to do so. It was made of dead and withered grasses, a few pine needles loosely arranged, and the pieces of wax paper all firmly interwoven. The whole, however, had a somewhat unfinished appearance. The next

BLUE-HEADED VIREO AND NEST

day I found the male bird twisting and turning himself in the nest, first this way, then that way, until he secured what seemed to him a perfectly comfortable shape. A few moments later he departed only to return with a mouthful of cobwebs with which he engaged himself about the edges of the nest. Very shortly, however, all was completed, and with a satisfied chatter he flew to a higher perch. Just then, however, the female reached the scene. Without ceremony she thrust herself into the nest to pass her judgment upon it, and woe and betide the masculine conceit. It proved far from satisfactory. She flew to a higher perch and uttered a few low guttural tones as much as to say, "Do you call this a perfect nest? I thought you knew how to build a better nest than that. It certainly does not meet my approval. I refuse to live in it until it is made satisfactory." The next day it had been perfected to suit her whims and fancies for I found her on the nest when I arrived. I was very curious to know whether eggs were actually present. Another visit in the after-

noon satisfied, or perhaps dissatisfied, my curiosity, for a Cowbird's egg had been deposited. For some time I debated seriously whether I should remove the Cowbird's egg from the nest. To me it seemed a perplexing situation for the Vireos to face. The unwelcomed egg was destroyed.

Early the following day, when both parents had slipped away for their breakfast, I managed to take another peep, and well was I rewarded, for there I saw one egg of the Vireo, followed by another on the second day, and a third on the succeeding day. I was exuberant with joy, and I longed to see the day when the young would crack their shells and get their first glimpse of the world.

YOUNG COWBIRD AND BLUE-HEADED VIREO'S NEST

The next day four eggs were found. Careful observation however, revealed that another Cowbird's egg had been slipped into the nest and lay by the side of the three of the Vireo's own. Just then, the male returned. He lit on the edge of the nest and glanced in. Something was wrong. He became alarmed, flew to a neighboring hemlock, singing with all the life and energy his little body possessed. What a strange action! His excitation was calmed by an outburst of song. Of course, I could not resist the temptation of removing the Cowbird's egg.

My frequent visits assured me that my new friends were becoming quite accustomed to my presence, for they offered no signs of alarm or curiosity. However, I was anxious to see how near I could approach without causing great disturbance. I had often heard of their confiding nature. Very carefully I raised my hand and tried to touch the beautiful hanging-basket. Not a stir! Not even a movement of the head to see who the intruder might be. I actually stroked its back. Instead of fluttering his wings, as the majority would do, he merely twisted his neck and looked at this ungainly sized hand. He was curious indeed, but not alarmed. He remained faithfully at his post. Excepting the Chickadee, I had never before had the pleasure of touching a wild bird. To me it was the event of spring. If I had only had a camera, what a delightful representation of confidence would I have secured.

As usual, I found the birds there the following day, flitting back and forth in search of food. They exhibited no signs of alarm, curiosity, or fear when they

returned so I concluded all was well. Once more I tried to see if the male still would have confidence in me. I stroked his head, touched his bill, and still he moved not a feather. That day I left the woods feeling quite proud that I had made the friendship of the long, but vainly sought Blue-headed Vireos. The next day Dr. Allen of Cornell and a friend visited the nest and were able to secure photographs as evidence of the bird's confiding nature.

On June 16, about twenty days after the first time the male was seen incubating, Dr. Allen again visited the nest hoping to find a family of Vireos, but much to his amazement all he discovered was a Cowbird fledgling. What a disappointment! Where were the young Vireos? No doubt, in our absence, another Cowbird had discovered the nest, and left the third bomb that resulted in this calamity.

CROW ABOUT TO FEED YOUNG
Photographed by Guy A. Bailey, Geneseo, N. Y.

BREWER'S BLACKBIRD

Snapping the Back-yard Birds

By PAUL H. DOWLING, Los Angeles, Calif.
With photographs by the author

IT IS a fine sport,—this business of photographing birds in your back yard,—especially if the subjects of your pictures are obliging enough to pose around a water-hydrant with no apparent fear of a kodak set up a few feet away. I found the Goldfinch the most accommodating of all of these back-yard birds. It was one of his favorite tricks to perch upon the water-hydrant, make a neat little bow as if saying "How do you do," and twist his neck around so as to dip his bill in the running water as it came slowly from the pipe.

To snap the birds I needed only a small amount of equipment: a folding Brownie No. 2A, a piece of string about twenty feet long, a pile of bricks to rest the camera on, and a chair in which to sit in the warm sun and wait till the birds got thirsty. About nine in the morning I took my post about twenty feet from the drinking-place. It was only a few minutes until the first Goldfinch flew down upon the hydrant from a tree nearby. He perched himself above the running water and tried to stick his whole head inside the pipe, drinking literally upside down. I tried to pull the string while he was in this queer position but the little fellow was too quick for me; so I had to content myself with a picture of him standing right side up. The Goldfinches do not seem to be afraid of the kodak but are so continually on the move that one has to make a quick snap at just the right time to get anything that looks like a bird on the film.

The hydrant that furnished the watering-place for the birds around my house stood only a few inches from the ground, and while it was too high for the

Goldfinches to reach, the Brewer's Blackbirds had little trouble in standing on the ground and taking their refreshment as the drops came from the iron. I allowed it to run just a few drops at a time so I could amuse myself watching the birds reach up for the water. As a matter of fact they seemed to enjoy this method of getting a drink about as well as any. There were three similar hydrants in the yard, so I had to keep two of them dry in order to get the birds in front of the one where the camera was located. It didn't take long for them to get into the habit of coming here, however, for they soon made this their Coney Island even when the others were running and in spite of the camera which stood only three feet away. The Blackbirds certainly valued fresh water, even insisted upon having it, for they utterly disregarded a pan of water standing below the hydrant—chose rather to crane their necks and catch the drops as they dripped from the pipe. These birds were just a little wary of the kodak and would edge up to the hydrant, get a drink, and scurry away when they heard the snapping of the shutter.

GOLDFINCH

Some Experiences in Attracting Birds—The Nesting of a Red-breasted Nuthatch

By HENRY S. SHAW, Jr.

IN THE fall of 1914 I began feeding the birds at my home in Dover, Massachusetts. There was nothing elaborate or unusual in the apparatus employed, which consisted chiefly of a window-shelf, a weather-cock feeding-house, several wire suet-baskets and a shallow pan for water. The feeding-house and suet-baskets were obtained from the Dover bird-warden. After some months I discontinued the use of the weathercock house (except during snowstorms), preferring to have the birds come to the shelf, where they could be more easily observed. The suet-holders were put where they could be readily seen from our windows, and three out of four were placed on pitch pines, whose rough bark seemed attractive to Nuthatches and Woodpeckers.

During the winter the shelf was visited most regularly by Chickadees and Red-breasted Nuthatches, with an occasional White-breasted Nuthatch and Junco. In the early spring a number of Purple Finches appeared, and later on Chipping Sparrows were occasionally seen. But the most unexpected visitor was a female Pine Warbler, which came to the shelf many times each day for two or three weeks. She kept busy while on the shelf picking up small particles of seeds, etc., especially bits of sunflower seeds left by the Purple Finches. One of the photographs shows the Warbler perched on the edge of the shelf.

There is nothing of particular interest about the shelf itself except, perhaps, the fact that it is easily removed for cleaning, and has rather high sides, to lessen the likelihood of the contents blowing off. I used sunflower seeds, hemp seeds, crumbs, and sometimes chopped nuts.

At the present time the bark of a pitch pine which stands near the shelf is quite thickly studded with the shells of sunflower seeds which have been wedged into the crevices by White-breasted Nuthatches. It is interesting to watch one of these birds take a sunflower seed from the shelf, fly with it to the tree, and then climb up and down the trunk until a crack in the bark is found which will hold the seed securely. Then the bird, generally head downward, hammers the seed vigorously with its bill and easily extracts the kernel. The little Chickadees also open the sunflower seeds by hammering on them with their bills, and they are able to deliver blows of considerable strength, the seed being held between the bird's feet, either on a small branch or on the edge of the shelf. In the latter case the noise of the pounding can easily be heard in the house, even in an upstairs room. The Purple Finches, on the other hand, can readily crush the seeds with their powerful bills and do not have to resort to any hammering.

The pan of water proved an attraction even in winter, and although the water often froze at night, it was an easy matter to knock out the ice in the

morning and refill the pan with water, which would generally remain unfrozen during the day.

Little need be said of the suet, except that of the twelve species of birds seen eating it the Chickadees, Nuthatches, and Downy Woodpeckers were the most plentiful. But it is interesting to note that, for a time in the spring, Pine Warblers, both male and female, came to the suet quite regularly.

The birds which interested me most, I think, were the Red-breasted Nuthatches, not only because of their tameness and quaint manners, but also because I associated them with the New Hampshire forests where I had first become acquainted with this species. These little birds were among my most regular visitors and seemed to be nearly as numerous as the Chickadees. They

FEMALE PINE WARBLER AT FEEDING-SHELF
Photographed by C. E. Dodge

preferred hemp seeds and chopped nuts at the shelf and seemed especially found of the suet. They also drank the water frequently, and in general appeared to be so much at home that I often thought how nice it would be if they would stay to nest, instead of leaving for the North in the spring. However, I hardly expected that my wish would come true, because I knew that they were birds of the Canadian Zone, and that there were but few records of the species having bred in eastern Massachusetts.

Therefore, I was delighted when, on April 10, I noticed a female Red-breast carrying nesting material into one of my bird-boxes. This is a Berlepsch box, size No. 2, made by the Audubon Bird House Co., of Meriden, N. H. The entrance hole is one and one-eighth inches in diameter, and the box, which is made of yellow birch, is placed in a white birch tree about seven feet from the ground. It was put up in the hope of attracting Chickadees.

I did not see the male Nuthatch at work until April 16, when I observed him carrying shreds of bark which he pulled from the trunks and limbs of red

cedars (*Juniperus virginiana*) growing nearby. Examination of the box after the nesting-season showed that the nest was composed exclusively of this material, the box being filled to within an inch or two of the level of the entrance-hole. The male usually left his load at the hole, without entering, and I suppose that the material was put in place by the female inside.

On April 23, on my return home after a few days' absence, I saw the male fly to the box and feed the female who stuck her head out of the hole. I supposed that the incubating period had commenced, but on April 27 I saw more nesting material being carried, this time by the female. One of the photographs was taken with the idea of showing the male in the act of feeding the

RED-BREASTED NUTHATCH WITH FOOD FOR YOUNG
Photographed by E. H. Forbush

female, but unfortunately her head shows only indistinctly in the hole, while the male moved his head slightly so that the bill is somewhat blurred. I noticed this feeding process quite often during the nesting-period, and observed that frequently the female would fly out of the box as soon as she had received the food her mate had brought.

I had heard that the Red-breasted Nuthatch had the habit of surrounding its nesting-hole with pitch, so I was on the watch for it, and one morning, when the light was right, I saw that there was a thin layer of pitch close to the hole. At first this layer was so thin and transparent that it was noticeable only when the sun was shining on it at the right angle, but as the nesting-season advanced more and more pitch was added, so that before long it could be seen easily,

even at a considerable distance. Some of the pitch was later melted by the heat of the sun and ran down the front of the box in drops, which can clearly be seen in the accompanying photograph. This picture was taken immediately after the young birds had flown, when the box was taken down temporarily. The photograph also shows that most of the pitch was placed at the lower right-hand side of the hole, but there was, in addition, a thin layer which almost encircled the hole, but which was too nearly transparent to be visible in the picture. There was one place, however, at the lower left-hand side of the hole where the pitch was absent, and it was always at this point that the birds clung before entering the hole.

BERLEPSCH BOX USED BY RED-BREASTED NUTHATCHES SHOWING PITCH AROUND HOLE
Photographed by H. T. Shaw, Jr.

Naturally I hoped I might find some clue to the birds' purpose in putting on the pitch, but in this I was disappointed. Not only did I fail to observe the actual process of applying the pitch, but I was unable to see that its presence affected the movements of the birds in any way, except that they always entered the hole at the place where the pitch was absent. There was nothing to indicate that the pitch would be effective in keeping out enemies or in catching insects which might serve as food. I discussed this matter with Mr. C. J. Maynard, the naturalist, and he suggested that it might be a relic of some ancestral habit when, perhaps, the female may have been entirely sealed in during the nesting-period. In this connection he pointed out that at the present time there are certain species of Hornbills in Asia and Africa in which the females are plastered up in the nest by the males and are fed by the latter through a small hole. But whatever is the explanation in the case of the Red-breasted Nuthatch, it is a habit on which it would be well to have more information.

Naturally, I was very desirous that the birds should not be in any way disturbed, at least until they had become thoroughly established in their new home. Therefore I made no attempt to see the eggs. But on May 22 I felt quite sure that the young had hatched, so I cautiously lifted the lid of the box, and looking in, saw a downy blackish mass, in which I could count seven yellow bills. I was careful to stay near the nest only a moment, but I discovered afterward that I need not have been so particular, for the old birds, especially the male, seemed to be quite unconcerned when I approached even to within ten feet or so of it.

The parents were now kept busy feeding their young, and I saw them bring winged insects, small green caterpillars, and suet. I was interested to find that the suet apparently formed a considerable proportion of the young birds' diet, and I saw the parents make many trips from the suet-holders to the nest, a distance of some fifty yards. The birds would generally make two or three trips to the suet and then go off for something else.

On June 2, Mr. E. H. Forbush, State Ornithologist of Massachusetts, came out to take some photographs. He looked into the nest and could see at least six young birds which seemed to be about ready to fly. They were still in the nest on June 4, but on the morning of June 5 the box was empty. We discovered some of the young birds in pine trees not far away and found that they were active and could fly well. In fact they closely resembled the adults except for being lighter in color.

Several times during the next few days I saw some of the young birds perched close to the suet, being fed with it by one of their parents. And in less than ten days after the young had left the nest I saw two of them picking at it unaided.

The Nuthatches remained in the vicinity until some time in August, but I have not seen them at all during the last six months. It will be interesting to see whether or not any of them return in the spring to nest.

As far as I have yet been able to ascertain, this is the first record of the Red-breasted Nuthatch having nested in a bird-box and I would be glad to know if any other cases have ever been reported.

I never heard the Nuthatches give any "song" other than their usual nasal notes, but during the breeding-season they frequently indulged in low conversational twitterings, which were both pleasing and expressive.

MOURNING DOVE
Photographed by Elton Perry in Texas

Notes on the Plumage of North American Birds

THIRTY-EIGHTH PAPER

By FRANK M. CHAPMAN

(See frontispiece)

Sage Thrasher (*Oroscoptes montanus*, Fig. 1).—In nestling or juvenal plumage the Sage Thrasher is streaked above as well as below, and the ground-color of the upperparts is browner, but after the postjuvenal molt young and old birds are indistinguishable.

There is no sexual difference in the plumages of this species, and summer specimens differ from winter ones only in being somewhat more sharply streaked and less buffy below, and in lacking the whitish margins to the inner wing-feathers. There are no geographical races of the Sage Thrasher.

Mockingbird (*Mimus polyglottos*, Fig. 2).—When it leaves the nest the Mockingbird bears a general resemblance to its parents, but the breast and sides are thickly spotted with dusky and the upperparts are browner. At the postjuvenal molt these differences disappear and in its first winter plumage the young of the preceding summer cannot be distinguished from older birds. There is no spring molt, and summer plumage differs from winter plumage only in being grayer and more worn.

The male Mockingbird usually has slightly more white in the wings and tail than the female, but the difference is not sufficient to permit of the identification of the sexes in life.

Two forms of the Mockingbird are found in the United States. The Eastern Mockingbird (*M. p. polyglottos*) ranges west to eastern Nebraska and eastern Texas; the Western Mockingbird (*M. p. leucopterus*) is found from the western limit of the range of the eastern race westward to the Pacific. These two forms very closely resemble one another, but the western bird is slightly paler above and more buffy below.

Catbird (*Dumetella carolinensis*, Fig. 3).—The plumage of the Catbird is essentially alike in both sexes and at all seasons. The nestling is duller throughout and the lower tail-coverts are paler, but these slight differences disappear with the postjuvenal molt. Some females have the crown and upperparts slightly browner than in the male but they vary too little to make the sexes certainly distinguishable. The Catbird shows no geographic variation throughout its wide range.

Brown Thrasher (*Toxostoma rufum*, Fig. 4).—The plumage of the Brown Thrasher is alike in both sexes; the young birds closely resemble their parents, and there are practically no seasonal variations in color. The nestling has more or less dusky in the upperparts and, as usual with young birds, the streaks below are less distinct than on the adult, but with the postjuvenal molt these differences are lost, and for the remainder of its life a Brown Thrasher does not differ materially from our figure.

Notes from Field and Study

Notes from Phillipston, Mass.

The 'Gardner News,' of Worcester County, Mass., records Evening Grosbeaks at Templeton, February 5. In the afternoon of the same day a flock was seen on Phillipston Common where there are numerous maple trees. The distance between the two places is about four miles. It is not improbable that it was the same flock seen on Templeton Common.

I saw a pair of Golden-crowned Kinglets, January 25. There is no record of their having been seen before in this locality during the winter months.

Last summer a pair of Traill's Flycatchers were observed for the first time, and a parent bird was seen with a young bird in the act of feeding it. But for the alarm-notes I might not have detected either.

A pair of Juncos reared a brood here which is the first record of their being summer residents in this immediate locality. Crows are great disturbers of birds in the country during nesting-time. Last spring twenty crows were counted upon an apple tree about an eighth of a mile from this residence. They doubtless take great numbers of fledglings and eggs. Robins have to use their utmost ingenuity and care in selecting a nesting-site. Last year a pair of Robins built their nest in an oil-can, which was on a shelf in one corner near the roof of a steam mill, to escape the Crows that are abundant every year and perhaps more common than usual during 1915. It is no wonder that there is a scarcity of birds in this region when we realize the depredations of the Crows and the Sharp-shinned Hawk. I do believe, from my own experience, that the latter take two-thirds of the Robins that leave their nests. If an educated person who could identify Hawks and distinguish between the different species were engaged by this state to look after the welfare of insectivorous birds in the country during nesting-time, keeping the Sharp-shinned Hawk and troublesome Crows in abeyance, there would be vastly more birds and they would have a happier and more comfortable time.—Mrs. Myra Dunn, *Athol, Mass.*

Winter Notes from Southern Connecticut

Though the past winter has been the most severe in forty years, there has been a scarcity of winter birds, and only an occasional rare bird from the North, but a number of unusual records for this section.

A Chipping Sparrow and a Mourning Dove have fed regularly from the same place in a yard at Norwalk all winter. Black-crowned Night Herons have wintered at Norwalk and at Fairfield, and at the latter place I saw four, one adult and three immature birds, in the spruces in Mrs. Wright's yard the morning of February 25, and these birds have visited the little stream in Birdcraft Sanctuary nightly.

One was brought to me on February 24, having been picked up under a shed and evidently frozen, and it is mounted and in Birdcraft Museum.

These birds are not given in the 'Birds of Connecticut' after November 17.

December 26, three Pine Grosbeaks were seen at Fairfield, and the next day were in Birdcraft grounds, just a day late for the Christmas census.

The last of February I was told of a bird at Bridgeport that puzzled those who had watched it all winter, and, on March 3, I went and found it to be a Mockingbird, and that it had been about Laurel and North Avenue all winter.

March 3, a flock of eight Evening Grosbeaks was reported to me from Norwalk, and on March 8 one male was reported in the same place and fine observations made. The same day a small flock of Redpolls was reported.—Wilbur F. Smith, *South Norwalk, Conn.*

A Nest Census

During the breeding-season of 1915, my friend, Robert Hatt, and I kept a record of the nests found in our vicinity. Most of these nests were noted in a tract of land about fifteen miles long and two miles wide. The nesting-season extended from April to August and we noted probably half of the nests built during this time.

To do this we kept a notebook in which we noted each nest as it was found. We took many trips into the country and around the farm for this purpose. The Killdeer nests we found close to the stalks of young corn while plowing it. Some of the Doves' nests were found to be but hollows in the ground, while the Phœbes' were all under bridges. The Blue Jays and Robins nested around the house and it was hard work to keep the cats and Crows from their nests.

We found this a very interesting way to study birds as it teaches one just where to hunt for each kind. The first nest found in the season was a Bluebird's in a house I had put up. It was on April 10. The last found, a Dove's on August 25, was in an apple tree.

The following is the list of nests with the number of nests of each species. We did not count English Sparrows' nests or Cowbirds' eggs.

Species	No. of nests
Spotted Sandpiper	1
Killdeer	5
Bob-white	3
Prairie Chicken	1
Mourning Dove	19
Sparrow Hawk	3
Yellow- or Black-billed Cuckoo	3
Belted Kingfisher	2
Red-headed Woodpecker	28
Flicker	10
Chimney Swift	4
Kingbird	5
Crested Flycatcher	3
Phœbe	5
Blue Jay	11
Crow	8
Bobolink	1
Red-winged Blackbird	27
Meadowlark	17
Orchard Oriole	2
Baltimore Oriole	6
Purple Grackle	4
Chipping Sparrow	1
Field Sparrow	2
Song Sparrow	1
Towhee	4
Cardinal	3
Indigo Bunting	4
Dickcissel	1
Purple Martin	34
Barn Swallow	6
Bank Swallow	16
Loggerhead Shrike	3
Catbird	16
Brown Thrasher	27
Bewick's Wren	2
House Wren	5
Tufted Titmouse	10
Robin	42
Bluebird	19

Total, 40 species, 364 nests.

—Samuel G. Meigs, *Lafayette, Ind.*

Spotted Sandpipers

Two members of a bird-club went to a small pond one day to look for water-birds. As they drew near they noticed a Sandpiper, which instead of flying away hung around for some time giving a certain call. One of the girls said: "I believe that Sandpiper has some babies here!"

Not a sign of the young ones could be seen, however, so they sat down on the bank to watch. Just then the Sandpiper swam to the farther side of the pond and began to call a different note over and over. Suddenly the grass moved at their feet on the edge of the pond, and out popped a little Sandpiper baby not so large as a newly-hatched chicken! Such a tiny, fluffy ball! It teetered along through the grass till it came to the water, and then one of the girls exclaimed: "That tiny thing can never swim to its mother—it will surely drown!" But in it went, and swim it did, and reached its mother safe and sound. Then the mother called again, and at once *another* little baby appeared

at their feet, and paddled off to her. Still another call brought the third obedient child, and then the fourth, and last, went to her. The part that was most surprising to the girls was the fact that not one bird was to be seen till the mother called a *different* note, and especially, that they all went *one at a time*. Not one chick started out of the grass till the one ahead had swum across, and the mother had called again!—Alice Sage Allyn, *Middletown, Conn.*

Occurrence of Starlings in Dorchester County, Md.

The Starlings first made their appearance in this locality (southern Maryland), so far as I am aware, on February 14, 1916. A large flock of at least seventy-five individuals were noted and again observed the two following days, the 15th and 16th. The 14th was without question the coldest day of the winter, the ground being covered with snow, which was drifting in huge banks before a heavy northeast gale. Under these tempestuous conditions the Starlings were observed to feed in close flocks in the few wind-swept places of the fields. After feeding they would alight on the roof of the outbuildings or a sheltered tree and there enjoy the sunshine out of the biting blast.—Ralph W. Jackson, *R. F. D. No. 1, Cambridge, Md.*

Can the Starling Rule Birdland?

Concerning the English Starling I have learned enough to distress the lover of wild birds. This imported prodigy seemed to have singled out my father's land as the first spot in the neighborhood on which to establish itself. Two pairs came about five years ago and built in maple hollows near the stables. Incidentally, let me say with anything but sorrow, that to do this they drove out two rowdy families of English Sparrows.

There was a tall buttonball tree on the hill nearby in which there were eleven holes drilled by Flickers and two others caused by limb-decay. In these lived Flickers, Wrens, Sparrows, and Sparrow Hawks in happy disregard of each other until the Starlings found them out, and for the following year joyfully took two of the best sites. There were then, by actual count, two pairs of Starlings, four pairs of Flickers, one pair of Sparrow Hawks, and two pairs of English Sparrows nesting in that fine old tree, several Flickers having apparently already been driven away. The next year there were at least five pairs of Starlings while the Flickers had dwindled to two pairs. For the last two years there have been only sharp Starling heads sticking out of those holes bored with such exertion by the fine Flicker tribe, and instead of grubs, cherries are borne in increasing numbers to the nestlings.

Not only there, but in all the old trees about the buildings, holes have been taken over by this bird-pest who has now entirely eliminated from the orchard Bluebirds and Crested Flycatchers. His very presence seems also to discourage most other varieties of birds, for the place is now fast becoming one where the Crow, the Grackle, the Starling, and the English Sparrow alone enliven the scenery. And what songsters they are!

That the Flicker suffers most is shown by the way he has attempted to adopt inadequate bird-houses to his nesting needs. Two pairs enlarged the entrance-holes in empty Bluebird boxes only to find something unsatisfactory in each. Another tried hard to bore into a work-box placed on a telephone-pole near the house, and one in his zeal came down the chimney in my bedroom.

I have found the Starling very difficult to trap but comparatively easy to shoot. However, the more I have shot the more have come; so I see little relief ahead and can only feel grave fear that the Starling will soon rule all settled districts in this state.—Joseph W. Lippincott, *Bethayres, Pa.*

A Singing Blue Jay

Though the Blue Jay has the reputation of being "both a mimic and a ventriloquist," I personally have never before

heard him perform as remarkably as he did today, (March 28, 1916). The song of the particular Jay to which I have just been listening reminded me strikingly of that of the Mockingbird—though neither so loud nor so sweet nor so varied as the Mockingbird's song at its best. Interspersed with various common notes characteristic of the Jay, I thought I recognized imitations of the Flicker, Goldfinch, Catbird, and Ruby-crowned Kinglet, besides others, possibly, not so easily to be distinguished. This experience was to me so novel that a record of it may perhaps be of interest to your readers.—R. E. Robbins, *Brookline, Mass.*

Notes on Warblers

Because of a peculiar fondness for the Warblers the writer has been accustomed for several years to make a summary at the end of each year of this family of birds observed by him. In connection with the article on the 'Destruction of Warblers' in a recent Bird-Lore he ventures to make a digest of some of his observations as a contribution to this subject.

While 30 different species have been seen in Williamstown by the writer, during the migrating periods for the last thirteen years, not more than 19 have been noted in a single year, The number of different species seen in the spring for the years 1908–1915 inclusive, for which a more accurate account has been kept, are 9, 19, 5, 8, 19, 6, 10, and 15 respectively. From this it will be seen that there was a distinct falling off after a year in which they were common.

The year 1909 was by all odds the great Warbler year in this locality. Not only were a goodly number of species observed during the spring migration, but also there were literally thousands of birds here. The trees and yards in the town were swarming with them. They were absolutely fearless, spying all about the houses in their busy search for food. Many instances were reported where they had even invaded buildings where windows were open. They could be approached to within a few feet as they flitted about the shrubbery and fences along the public walks in every part of the town. One morning, upon looking out of a window at a bush growing nearby, twelve Warblers, of which five were different species, were seen at one glance. This lasted for about a week.

While this great migration brought joy to all nearby bird-lovers, yet it had its tragic side, for many were reported killed by dashing against windows which gave a strong reflection of nearby trees; and the all-too-prevalent cats destroyed a large number.

The year 1912 showed the same number of species, but the number of individual birds seen was nothing to compare with the former year.

The year 1915 has been very unusual in that the common Warblers were rare, and, conversely, the rare ones were rather common, chief of which were the Cape May which, during the spring migration, was the most common of any of the Warblers, and in the autumn the rare Blackpoll was very common. The Myrtle, which is always very common in the spring, was very rarely seen last spring, but was more common in the fall than ever before, being here from the last of August to the middle of October. The Chestnut-sided, which is common here, was very rare this year, as was also the Black-throated Blue, the Black-throated Green, the Magnolia, the Yellow-throated, and the Redstart. This was also true of those that nest in this vicinity.—W. J. Cartwright, *Williamstown, Mass.*

Bohemian Waxwings in Southern Wisconsin

It is a pleasure to me to be able to record the visit of a flock of nineteen Bohemian Waxwings, which I had excellent opportunity to observe on the afternoon of March 25, 1916.

There was no possibility of mistaking them for the Cedar Waxwings, for the yellow markings on the wings were plainly visible as they perched almost motionless

in the low apple and elm trees bordering the walk. The pronounced gray tone of their plumage, different from the brownish tint of the Cedar Waxwings was another proof.

While on the wing and when in the trees they uttered lisping, hissing whistles, a sound not unpleasing to the ear when given in unison by the entire flock. They seemed quite tame, apparently paying no attention to me though I was within a few feet of them.

Suddenly as though at a given signal, the entire company took wing and disappeared in a northeasterly direction over the town.—Ethel Allis Nott, *Reedsburg, Wis.*

Do Cliff Swallows Ever Build on Painted Barns?

The fact that the author of this article, in a wide experience covering an area from Maine to Minnesota and southward to the Gulf of Mexico, never has observed the Cliff (or Lake) Swallow nesting in colonies under the eaves of painted barns, has given rise to the query in the above title. Once only I have noted a single pair that built under the gable of a painted building—the dining-hall of Proctor Academy in Andover, N. H. The following year these birds failed to nest there.

I frequently visit a line of back-country towns in Washington County, Maine. I cannot recollect a single painted barn in these towns, and the Cliff Swallows nest on most of the barns there. They swarm everywhere, plastering their curious bottle-shaped houses well under the projecting eaves. The abundance of these birds is remarkable. In the nearby shire town, where ready money is more prevalent, and painted barns prevail, I cannot recollect a single colony built on such structures, though the birds breed freely on the unpainted buildings in the town. Painted barns are almost universal in southern New Hampshire. Cliff Swallows are as scarce as the proverbial 'hen's teeth.' I have noted just two colonies in our state this year, both built on unpainted barns. Do the birds prefer an unpainted building because it resembles the color of a cliff, or does paint prevent the mud from adhering with sufficient strength to support the structure and the growing brood? Perhaps both reasons are factors.

An interesting incident is illuminating here. A few weeks ago, while delivering an illustrated lecture in a country town, I cited the above views about the nesting of the Cliff Swallow. I also observed that no one could be sure that birds always observed the same rules, and requested anyone in the audience who might know of this bird building on a painted barn to please let me know of the fact. After the lecture a man came forward and told me of a painted barn close by, that, according to him, harbored a colony of Cliff Swallows. The next morning I made due investigation, but not a trace of any birds could I find. Inquiry at the farmhouse, however, elicited the information that the birds formerly nested there, but *had left since the barn had been painted.* Can anybody shed any further light upon this matter?

I would like to give a hint to those who may have these beautiful and beneficial Swallows about their buildings. The same will apply to the Barn Swallows. I have an uncle who loves birds and does all he can to attract them about his house. Every spring, when the Swallows arrive, he digs a quantity of clay from the lake, and close to the barn mixes it to the proper consistency in a shallow bed. The birds stand about so close he can almost touch them, awaiting their chance. On stepping aside, they eagerly attack the plastic clay, filling their beaks and flying to the barn, where they build scores of nests. Many hundreds of Swallows are reared in and upon the old building. Their merry twitter makes the old place lively. They amply repay their host, sweeping the air clean of mosquitos and other flying insects, making life endurable in a country mosquito-infested as are few regions in New England.—Manley B. Townsend, *Nashua, N. H.*

An Unusually Colored Chickadee

I inclose herein a photo of a unique Chickadee, its sides being boldly colored a dull black. As shown, the whole of sides are thus colored, leaving but a narrow streak of usual color along breast and abdomen.

This Chickadee was first observed feeding on my roof bird-garden on March 12, since when I have observed him several times. This particular bird has a retiring disposition, for while dozens of Chickadees feed daily on my roof-garden, he rarely visits the stubs and so far he has been alone. I have observed this black-sided Chickadee several times in different sections of the street and he was always alone.

I presume it is merely an unusually marked Chickadee.—C. F. Stone, *Branchport, N. Y.*

Nesting Habits of the Tufted Titmouse

I think I can explain the strange behavior of the Tufted Titmouse recorded in March–April, Bird-Lore.

A BLACK-SIDED CHICKADEE
Photographed by C. F. Stone, Branchport, N. Y.

These birds, which my father has often seen in the South, line their nests with a pulpy substance not unlike a sponge. They carry a large number of these damp leaf-balls to their nest-hole and there pull them into shreds. I do not know whether they use their claws and bills for this or not. The Titmouse uses this sort of lining for its nest only when they build in damp weather. They do not seem to be able to

use dry leaves in this manner.—Freda L. Hood, *Hudson, Ohio.*

A Winter Ruby-crown

On February 5, 1916, a Ruby-crowned Kinglet appeared on the window-sill of a second-story window, a suet feeding-station, since which time we have seen three, at least, repeatedly. One of these is apparently a female without a trace of color on her head, another apparently a young male with only a red feather or two, and the third a male in full plumage.

At first they were very shy, but they have become as tame as the Downies. You can imagine that we have had great pleasure in their visits.

Although we put nuts and crumbs out at different times, we never saw them eat anything but suet.

I have not seen them since the warm weather came, but I shall look for them again in case the ground becomes covered with snow.

My class, which is studying birds, and our former students, enjoy Bird-Lore, which is often quoted.—(Miss) Ida L. Reveley, *Professor of Biology, Wells College, Aurora, N. Y.*

Robins at Home

On April 15, 1915, I discovered a Robin's nest which owing to its rather unusual location seems of interest. It was situated about three and one-half feet from the ground in the fork of a split post in an open vineyard. The nest was fully complete when discovered, though I had passed the spot daily, and April 12 I had inspected the post carefully. It was a characteristic Robin's nest of twigs and grass, the usual mud rim and a lining of grass. A piece of white paper formed the foundation and was plainly visible from two sides.

The first egg was laid between 10 and 11.15 A.M., April 16, the second during the morning of April 17, the third between 10 A.M. and 6 P.M., April 18. From that time the female was on the nest whenever it was visited until noon April 21 when it contained four eggs. Incubation apparently began April 18 or 19.

The nest was visited from time to time until May 1, and always contained four eggs. As I was away from May 1 until May 7 my next visit was on that date at which time I found four downy Robins apparently one day old. The young grew rapidly and on May 13 were fully feathered

A ROBIN'S HOME

and on the 14th one had left the nest (was seen near); and the remaining three were seen to fly.

The accompanying photo was taken May 10, and shows the female and the heads of the two young. It was taken at six feet and as we had become well acquainted I had to wait only ten minutes after setting up my camera.—Drury L. Fish, M. D., *Kankakee, Ill.*

Evening Grosbeak in Northern New England

Never have I known the Evening Grosbeaks to be so abundant in northern New England as they are this winter. February 29, I found a flock of four at Woodsville, N. H., feeding on mountain ash berries. The following week, at Hanover, N. H., I observed a flock of seven eating sunflower seeds at a feeding-station. March 14, when in Lebanon, N. H., I found a flock of thirty-six. A flock of thirty is reported from Meriden, N. H., another flock from Concord, N. H., and three individuals from Nashua, N. H. Reports have come to me of these birds having been noted at Dorchester, Milton, Brookline, and Lexington, Mass., and at Westbrook, Maine. I noted that the birds I observed at Hanover and Lebanon, N. H., were first attracted by the fruits on the box-elder or ash-leaved maple trees (a food upon which these birds largely feed in the West) and that when this supply was exhausted they were induced to remain for weeks by sunflower seeds offered in feeding-boxes and on shelves at windows.—Manley B. Townsend, *Nashua, N. H.*

Evening Grosbeak in Maine

Bird-lovers in Lewiston, Maine, and vicinity have been having unusual and interesting experiences with Evening Grosbeaks. Two years ago, several visited different sections, but last winter none were here. December 31, this winter, one immature male appeared in one of the trees on one of the side streets of the city. In a few days, flocks of eight were reported in different places. Occasionally they would stop three or four hours, but usually they would feed a short time and fly away, making it impossible for those who were anxious to see them to reach the place before they had gone. As soon as a bird-lover would see them telephones would be busy till all were notified. The last two weeks in January a flock of seventeen visited a lawn in the suburbs every morning.

The ground was bare, as we had had mild weather, and they fed on seeds that had fallen from what the people called a linden tree. Then a little snow came and they disappeared. When the lawn was bare again, the flock returned, increased to thirty-five or more. Since snow came in February small flocks of individuals are seen about the residential sections of the city. A beautiful male comes to one place every day and feeds on the sumach. The immature males and females far outnumber the adult males. Nearly every bird-lover has seen them this winter. Flocks have been reported in South Paris, Farmington, Rangeley, and Winthrop.

On February 17, four Prairie Horned Larks were seen in Auburn, our sister city. This is earlier than usual, as they appear most years on Febraury 22. One year they were seen as early as February 9, while last year March 4 was the earliest record. We consider these our first birds to arrive on the spring migration.—Carrie Ella Miller, *Lewiston, Maine.*

Evening Grosbeak in New Brunswick

A new arrival has been seen of late (February 28, 1916) in small flocks about the town, feeding on fruits of the various trees, preferably box-elder and crab-apple. Their beautiful coloring, bright yellow and black, has attracted much attention. Even people who are most disinterested in birds have been attracted by another feature, and that is their utter disregard of the presence of man. Without the slightest difficulty one can come within very close range and thus obtain a good view of plumage and habits.

These birds are Evening Grosbeaks, and this is the first record we have of their ever visiting the province of New Brunswick.—Helen V. Burnett, *St. Stephen, Charlotte County, New Brunswick.*

Evening Grosbeak in Vermont

As visits of Evening Grosbeaks to New England are of such special interest, I send this account of their occurrence in St

Johnsbury, Vermont, hoping there will be other accounts of them in the next issue of BIRD-LORE.

On the morning of January 20, I saw a pair of Evening Grosbeaks feeding in an ash-leaved maple. The birds enjoyed a long breakfast hour in this tree, and I was able to spread the news of their arrival to other bird-lovers in town, several of whom went to see them. The next two days the pair were in the ash-leaved maples in that same place each morning or noon. Not passing the trees at the usual time on the 23rd, I did not see the birds at all that day, but on the 24th, at noon, the female was again eating in the favorite tree.

We tried to trace the movements of these birds through the bird-students who cooperate with the Museum in making bird-observations, but they seemed to be seen only when feeding in that locality. At a farm about five miles north of our village, some birds were reported to us as being "different from anything seen before" and from the description added we think they were a small flock of Evening Grosbeaks.

This pair apparently reported the supply of food to others of their kind for after a little over two weeks—on February 10, a flock of ten to twelve were feeding in this same group of box elders when I passed at noon. The males in the noon-day winter sunshine were most beautiful. —MABEL A. SHIELDS, *Assistant, The Fairbanks Museum of National Service, at St. Johnsburg, Vt.*

Evening Grosbeak at Exeter, N. H.

Evening Grosbeaks have been observed in this town every two or three years in small flocks, I have been told on good authority; but it has never been my good fortune to see any until the morning of April 3. I was attracted by the unfamiliar sound of their call-notes, a sort of metallic klink, and saw a flock of nine or ten. There were two or three males in brilliant plumage among the number and about as many with considerable yellow. The rest were evidently females.

Again on the 11th I saw in the same place what I took to be the same flock, and observed them for some time. At this time there was audible a fine singing as if one or more of them were amusing themselves with a "whisper song," but I could not positively trace the sound to any one of these beautiful birds. I am, however, quite confident that it was the singing of the Grosbeaks that I heard, for there were no other birds near. Besides this, the singing was not like that of any of our native birds.

During this winter and last a Pileated Woodpecker has spent his time in town. Last winter a Kingfisher remained through the whole season.—GEORGE H. SELLECK, *Exeter, N. H.*

Evening Grosbeak at Meriden, N. H.

We now (March 18, 1916) have a flock of over fifty Evening Grosbeaks feeding in the dooryards around the village, and their loud call-notes may be heard at all times throughout the day.

They have been here since early in February—only a few at first but gradually increasing in numbers. Some of them even enter the houses when a window is left open, with seed placed inside, and one of them fell into a waste-paper basket during a fight, when it was captured and 'banded.'

They have been reported from Hanover, N. H., Wells River and Hartland, Vt.

Early in March I saw one Horned Lark in a company of about fifteen Snow Buntings. They have also been seen in Hanover, N. H.—W. M. BUSWELL, *Meriden, N. H.*

The Evening Grosbeak at Williamstown, Mass.

The people in Berkshire County, Mass., had a rare opportunity to see a flock of Evening Grosbeaks, March 19. The younger bird-lovers had never seen them here, and the older ones look back over about twenty-five years to any previous visit of these beautiful birds. The winter here has been long and very severe with a greater snowfall then in any previous

year on record, and with no sign of spring up to the present. In fact, there is about two feet of snow on the ground with drifts up to ten or even twenty feet in the rural districts, so that the sight of these very rare and very beautiful birds came at a most welcome time. They were seen by many in different parts of the town, so there must have been quite a flock, but no real count was made. They were quite fearless. One was observed by the writer in his front yard where food was placed for birds, so a splendid opportunity was given to make a complete identification.

Another rare visitor has been the Snow Bunting, and the Starling has made its first appearance here this winter.—W. J. Cartwright, *Williamstown, Mass.*

Evening Grosbeak at Ashland, N. H.

On March 2, 1916, I observed two female Evening Grosbeaks feeding in some sugar maples, and later in sumac bushes, in the center of the village of Ashland, N. H. As this is the only New Hampshire record I have heard of this winter, I take pleasure in reporting it to Bird-Lore.—John B. May, *Waban, Mass.*

Evening Grosbeak at Poughkeepsie, N. Y.

On Thursday afternoon, February 17, 1916, I observed and identified seven Evening Grosbeaks feeding on locust seeds at our farm just outside Poughkeepsie, N. Y.

I reported these to friends, and today, the 20th, I found them back again at 10.30 A.M. Today has been cold and snowing all day. The birds were here at intervals all day, and were last seen at 3.50 P.M.

Mr. Allen Trast, of Poughkeepsie, Professor Saunders and Professor Ellen Freeman, of Vassar College, as well as Miss Dean, a student there, saw and identified them at this appearance with me.

As these are all bird-students, and as I believe this is a record for Poughkeepsie and Dutchess County, I think it worth reporting.—George W. Gray, *Poughkeepsie, N. Y.*

Evening Grosbeak in Rhode Island

I read with interest in the March-April, Bird-Lore the accounts of the appearance of the Evening Grosbeaks in Massachusetts, Vermont, New York, and Connecticut; but notice that no one has reported them from Rhode Island.

On April 31, 1916, the writer, in company with Mr. Harvey Perry of Westerly, R. I., saw a flock of seven Evening Grosbeaks (two males and five females) in Wilcox Park, Westerly. The flock remained several days and two females were seen as late as April 2.—Harry B. Agard, *Westerly, R. I.*

The Evening Grosbeak at Clinton, N. Y.

The notes on Evening Grosbeaks in Bird-Lore for March-April move me to write you that a flock of these birds have been visitors in this village for some time this winter.

About a month ago, I saw a flock of, perhaps, ten that flew past me and into a large, tall tree about twenty yards away.

I have seen several pictures of them, and recall to memory those in 'Birds and All Nature,' 'Birds of Michigan,' and L. A. Fuertes plate in 'Birds of New York.'

I have never seen any before this winter, but I had heard of this flock some weeks before seeing it; have not seen them since.—John Thompson, *Clinton, N. Y.*, April 10, 1916.

Evening Grosbeak at Newburyport, Mass.

On Wednesday, March 22, and the Thursday and Friday following, there appeared in this city a flock of Evening Grosbeaks. They came at the same time as the storm of that date and have left within the week.

They numbered from twenty to thirty and were positively identified, male and female. It is interesting to note that they were tame enough to stay all day in a hedge situated between a school-building and a church. They fed on the buds of

the hedge as they dropped the bud-shells on the ground beneath.

The coloring of the male was very vivid, noticeable against the snow and the dark branches. The black-and-white markings against the green body made him easy to distinguish.

The female was gray and white with no signs of olive-green. They outnumbered the males considerably.

I should be interested to know if they were seen in any other New England towns.—Marion H. Bayley, *Newburyport, Mass.*

Evening Grosbeak in New York City and Utica, N. Y

I should like to report the appearance of a female Evening Grosbeak in the New York Zoölogical Park, on February 15, 1916. The bird, which was quite alone, was feeding on cedar berries and the green tips of the twigs. As usual, she was fearless and easily approached. I am not aware of a previous record of the species in New York City, aside from Staten Island.

Mr. George W. Weston, of Utica, N. Y., informs me that on March 21, 1916, he observed six Evening Grosbeaks feeding on the ground near one of the main streets and within the city limits.—Lee S. Crandall.

The Evening Grosbeak in Greater New York City

Though there are a number of records of the occurrence of the Evening Grosbeak in New York State, chiefly in the central, western, and northwestern parts, there seems to be but one possibility that it has ever before been observed in New York City. In a catalogue of birds observed in New York, Long Island, Staten Island, and adjacent parts of New Jersey, George N. Lawrence, in the Ann. Lyc. Nat. Hist., 1866, pp. 279–300, lists it merely as rare and gives no specific locality. A more recent observation is that made at Plainfield, N. J., in 1914, by Waldron DeWitt Miller, (Bird-Lore, April, 1911; Vol. XIII, p. 95). It is highly gratifying then to report the first definite record for New York City which was made at 3.30 P.M. on Sunday, January 9, 1916, by the writer and Theo. L. Herman.

About a half mile southwest of Castleton Corners, Staten Island, is a section of country partially cleared by a real estate company, but still supporting a growth of scrub white oak, green briers, birches, and the usual characteristics of land left to survive abuse. The leaves of the scrub oaks are crisped and curled into bunches at the top, and the rattling of these leaves first drew attention to the presence of the birds, which proved to be a fine male and female Evening Grosbeak. It was easy to get within eight or ten feet of the birds at any time, so unsuspecting were they, and it would have been reasonably possible to knock one down with a stick. The only calls, rather short whistling notes, were given by the male, and he was especially conservative in this respect.

On the following morning the birds were again observed in the same vicinity and in practically the same place, but did nothing of peculiar interest. Rain kept the birds from their normal routine and made things disagreeable in every way for further observation. On the three following days the birds could not be found and doubtless left the locality, though a nearby pine grove offered an excellent roost. At this time it was supposed that the Grosbeaks might have gone to the Moravian Cemetery at New Dorp, three miles away, where an extensive pine grove offered suitable cover; but frequent trips revealed nothing there. Not until March 12, did the unexpected happen. Mr. Howard H. Cleaves, Mr. Theo. L. Herman, and the writer were photographing birds in the cemetery when Mr. Cleaves discovered the female Evening Grosbeak in an oak tree. She soon departed but returned later with the male and together they fed on the buds of a white maple. Here they stayed but a minute when they became alarmed and flew away, each giving a soft whistle.—Harold K. Decker, *Staten Island, N. Y.*

THE NEST AS THE PHEASANT CONCEALED IT

THE NEST AS THE PHOTOGRAPHER REVEALED IT

Two Pheasant Photographs by Arthur A. Allen, Ithaca, N. Y.

Book News and Reviews

Little Bird Blue. By William L. and Irene Finley. With illustrations by R. Bruce Horsfall and from photographs. Boston and New York. Houghton, Mifflin Company, 1915. 60 pages, numerous half-tones. Price 75 cents.

The authors of this little volume know both birds and children, and they interweave the strands of their story of bird-life and child-life in a way which should make a bird-lover of every child who reads it. We know of no better 'first book of birds.'—F. M. C.

The Winter Bird-Life of Minnesota. By Thomas S. Roberts, M.D., Ornithologist to the Department of Animal Biology, University of Minnesota and Associate Director of the Zoölogical Division of the Geological and Natural History Survey of Minnesota. Occasional Papers of the Zoölogical Division of the Geological and Natural History Survey of Minnesota. No. 1, Minneapolis, Minn., Feb. 1916. 4to, 20 pages, colored frontispiece, 13 half-tones.

This attractive-looking brochure is both authoritative and popular. It is therefore of equal value to the student who desires only its contained information on distribution for faunal purposes, as well as to the local bird-lover who would know when and where to look for birds during the winter in Minnesota, and how to identify those found. In addition to notes on times of occurrence, relative numbers, and field characters there is also more or less information in regard to habits.

Ninety-one species and subspecies are treated. Of these thirty-five are classed as Permanent Residents, seventeen as Winter Visitants, eleven as Half-Hardy Winter Visitants, and twenty-seven as Accidental.

The illustrations include a number of reproductions of interesting photographs from nature and a colored frontispiece of the Evening Grosbeak.

Publications of this kind are well designed to promote interest in local bird-study, and to bring their author in touch with field-workers throughout the area covered. Indeed, Dr. Roberts states that "one of the considerations in presenting this paper on our winter birds is the hope that it will bring to the Natural History Survey much additional information in regard to the bird-life of the State." Dr. Roberts may be addressed at the Zoölogical Museum, University of Minnesota, Minneapolis.—F. M. C.

In a Cheshire Garden. By G. Egerton-Warburton, Rector of Warburton. Sherratt and Hughes, 34 Cross St., Manchester, England. 12mo, 117 pages, 7 half-tones. Price 65 cents.

These chapters on the birds of an English garden are pleasantly reminiscent of Gilbert White and Selborne. With our growing interest in bird-gardening, they should appeal to us as a record of the relations established between human-life and bird-life in a country where bird and man were intimately associated when our own land was still a primeval wilderness.—F. M. C.

Birds of Porto Rico. By Alex Wetmore, Assistant Ornithologist, United States Department of Agriculture, Bulletin No. 325. Contributed from the Bureau of Biological Survey, Washington, March 24, 1916. 8vo, 140 pages, colored frontispiece, map, 7 half-tone plates. For sale by Superintendent of Documents, Washington, D. C. Price, 30 cents.

In response to a request from the Commissioners of Agriculture of Porto Rico, the Biological Survey sent Mr. Wetmore to Porto Rico to study the economic relations of its birds. Mr. Wetmore began his field-work on December 13, 1911, and continued it until September 11, 1912. During this time he gathered much information in regard to the bird-life of the island and 2,200 birds' stomachs. The contents of these stomachs having been determined, he now presents the results of his labors in field and laboratory in this report. It contains introductory sections

on the 'Physiography of Porto Rico' and its 'Bird-Life,' 'Methods of Increasing Birds,' 'Introduction of Birds' and an Annotated List of Species (pp. 17–129). In this list we have a thorough treatment of the status of the 162 species known from the area under consideration with remarks on their habits and as detailed a statement of their food as the data obtained warrants. The whole forms a most satisfactory memoir on Porto Rican bird-life and a unique contribution to our knowledge of the food-habits of tropical birds. A colored frontispiece and five full-page half-tones of Porto Rican birds, by Fuertes, add to the value of this publication.—F. M. C.

Our Dooryard Friends. By Sara V. Prueser. The Platform, Steinway Hall, Chicago, 1915. 12mo, 204 pages, 2 colored plates, 36 half-tones, 17 line-cuts.

Brand Whitlock, who writes an introduction to this little volume, confesses that in reading it he has been reproached by an ignorance of his own land; by a failure to realize "that there was so much of interest going on in it as Miss Prueser has discovered within a few yards of her own door." How often the nature-lover hears this same thought expressed by those who envy him the obvious resources he has discovered in the world immediately around him!

This invaluable knowledge of the animate forms about us cannot be acquired in a day. It grows with us, becomes part of us, and retains its power to add to the pleasure and sweetness of life long after our interest in more material things has vanished. Books like Miss Prueser's dealing with the birds of our dooryards are well designed to open the gate which may lead to the larger joys of the fields and forests lying beyond. She writes of the Chickadees, Nuthatches, and 'Downies,' Blue Jays, Phœbes, and Cardinals and other birds which meet us more than half-way when we extend the hand of friendship to the inhabitants of the feathered world and make us realize how much more they can add to our lives than we can to theirs.—F. M. C.

The Bird Poems of Miles A. Davis. Published by John White Johnston, Rochester, N. Y. Printed by the Roycrofters, East Aurora, N. Y., 1916. 16mo, 37 pages.

In this dainty booklet Mr. Davis pays his tribute in verse to the charms of bird-life. The Robin, the Bluebird, the Oriole, the Bobolink, and other familiar birds of garden and meadow arouse within him a poet's appreciation of their beauty of form and song; while the Wild Goose and Stormy Petrel stir his muse to eloquent expression of their mastery of the air or wide spaces of the sea.

Mr. T. Gilbert Pearson writes a sympathetic introduction to this collection of poems, which will, we are sure, find favor with all nature-lovers.—F. M. C.

The Ornithological Magazines

The Auk.—In the April issue no less than three writers touch on Audubon and his work: Mr. J. E. Thayer under the title 'Auduboniana' presents to our notice four half-tones of original water-color drawings, with a couple of letters written in 1841; Mr. G. B. Grinnell also presents a couple of letters written in 1833, and Mr. S. N. Rhoads throws 'More Light on Audubon's Folio, Birds of America.'

Dr. W. M. Tyler takes up a neglected phase of bird-migration and writes on 'The Call-notes of Some Nocturnal Migrating Birds,' but there is hardly the mystery about the notes that he implies, for none of them are essentially other than those that may be heard by day. The striking call of the Olive-backed Thrush, for instance, may be commonly heard in the summer months on the northern breeding-grounds of the species.

The title 'Bird Watching and Biological Science' by Mr. J. S. Huxley, is a contribution to what might be called psychological ornithology. It is easy to become imbued with modern ideas, and there is a tendency among writers on this subject to think along in print rather than to present clear-cut conclusions. A molehill of fact is often made to produce a mountain of theory, and facts as stated by amateurs

need much verification by professionals before they can form a really secure basis for any abstract theory.

Of local lists there is one by Mr. W. W. Cooke, on Labrador, a continuation of Mr. Mousley's birds of Hatley, Quebec, and one by Mr. A. P. Smith on birds of Kerr County, Texas. Two New Forms of Petrels from the Bermudas *Æstrelata cahow* and *Puffinus puffinus bermudæ* are described by Messrs. Nichols and Mowbray.

The 'Auk' closes with some controversial matters under 'Correspondence' and a brief obituary notice of Daniel Giraud Elliot, one of the most distinguished of the men who have adorned the science of ornithology.—J. D.

The Condor.—The March number of 'The Condor' with seven general articles and twenty-eight illustrations presents an unusually varied and interesting series of subjects. A remarkable set of photographs of 'Sea Gulls at the Panama-Pacific International Exposition' taken by Joseph Mailliard shows the abundance and tameness of the half-dozen species of these birds which formed a characteristic feature of the exposition.

Mrs. Bailey's 'Birds of the Dakota Prairie' is continued with an account of the birds observed on the lakes. The White-winged Scoter, at its southernmost breeding-place on Stump Lake, N. D., naturally receives special attention, but the habits of the Black Tern, Franklin's Gull and several species of Ducks are also mentioned.

A unique account of the little-known 'Farallon Rails of San Diego County' is given by Huey, based on seven years of observation. Among several interesting facts may be mentioned that the birds seem to be resident in this region, that their food consists largely of an Isopod crustacean (*Alloniscus mirabilis*), that the number of eggs varies from 4 to 8, and the nesting dates extend from March 24 to May 25.

Two interesting life-history papers will be found in M. P. Skinner's 'Nutcrackers of Yellowstone Park' and W. C. Newberry's 'Chapter in the Life History of the Wren Tit.' Skinner notes that Nutcrackers combine the peculiar habits of Woodpeckers, Crows, and Jays. They will eat anything, and in the Park "build their nests in February and bring forth their naked young in March, long before the snow has left the ground." The eggs are laid about March 1, and incubation lasts twenty-two days. The Wren-Tit, although an abundant bird in the hills about Berkeley, Calif., is so secretive in its nesting-habits that its eggs are seldom seen. In a nest under observation in 1915, the set of three eggs was completed April 2, the young hatched April 20, and left the nest May 6, indicating that incubation lasts eighteen days and the young remain in the nest only about sixteen days.

A local list comprising notes on 'Some Species of Land Birds of Tillamook County, Oregon,' is contributed by Jewett, based on observations made on eighty species during the last three years.

Howell contributes to the discussion of vernacular names a short note in the form of an objection to the term Audubon Canyon Wren as a substitute for Dotted Canyon Wren. He suggests instead the name Ridgway's Canyon Wren, in honor of the describer, with the explanation "why not be uniform and call the birds either after the describer, or as those gentlemen intended they should be named."

Under the caption 'The New Museum of Comparative Oölogy,' Dawson outlines an ambitious plan for a museum at Santa Barbara, Calif., which while giving special attention to Oölogy will be devoted to the advancement of ornithology in its broadest sense. The keynote of the new institution is coöperation and the plan which may require twenty-five years for its realization calls for the construction of buildings which will cost $150,000 and an endowment fund of over half a million dollars.—T. S. P.

WELLS W. COOKE

Bird-Lore

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Bird-Lore's Motto:
A Bird in the Bush Is Worth Two in the Hand

WELLS W. COOKE
1858–1916

In the death of Wells W. Cooke at Washington, March 30, 1916, following an attack of pneumonia, not only his immediate friends and associates, but hundreds who knew him only by correspondence, experienced a deep sense of personal loss. Possibly no professional ornithologist had established closer relations between himself and amateur observers throughout the country than Professor Cooke. He was the father of the coöperative study of bird-migration in America. As early as 1881 we find him organizing local bird-students in the Mississippi Valley, and the 'Ornithologist and Oölogist' for a number of years contained reports of the records made by himself and his volunteers.

It was natural then that when the American Ornithologists' Union was founded in 1884, Cooke should be placed in charge of migration work in the region he had already made his own. It was equally natural that with the growth of the Division of Economic Ornithology and Mammalogy (now Biological Survey) of the Department of Agriculture, to which the migration and distribution investigations of the Union were entrusted, Cooke should be asked to join the Survey to assist in developing this phase of its work. From that date (June 1, 1901) to the day of his death, Cooke was identified with the Survey. Never were man and opportunity better mated. For the past fifteen years, with undiminished enthusiasm, Cooke has devoted himself to gathering data in regard to the migration and distribution of North American birds. Many men would have been overwhelmed by the mere attempt to catalogue the enormous mass of published and unpublished records which Cooke classified. It is indicative of his unflagging persistence that having developed writer's cramp in his right hand, he trained himself to write with his left, and thereafter changed from one to another as occasion required.

But Cooke was not a mere accumulator of facts. They were only the bricks with which he erected the edifices which will always stand as monuments to his industry and clear thinking. The second publication of the (now) Biological Survey was his 'Bird Migration in the Mississippi Valley' (1888), and this has been followed by a series of special Bulletins on the migration of various families of North American birds and on the subject of migration, and by publications elsewhere.

For the past thirteen years practically every number of BIRD-LORE has contained a contribution by Professor Cooke. These papers present summarized tables of migrations throughout North America of the Warblers, Thrushes, Flycatchers, Vireos, Sparrows, and Kinglets, and contain admittedly the most valuable material published by this magazine.

Cooke's papers before the American Ornithologists' Union always contained something new, were clearly presented, and in their delivery their author unconsciously revealed that love for his subject which added so greatly to the attractiveness of his personality.

If anything can reconcile us to the taking away of a man in his prime it is a knowledge of the fact that he has made the best use of the time allotted to him. Cooke cut a straight, clean swathe through the field of life, and with no loss of time or waste of effort garnered as full a harvest as the limit of his years allowed.

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the Editor, 67 Oriole Avenue, Providence, R. I.

TAKING A ROBIN CENSUS

In previous issues, various methods have been described of stimulating interest in bird-study not only in schools but also throughout civic centers. During the spring of 1915 a public-spirited business man in the city of Sterling, Illinois, undertook to awaken the people, and especially the school-children in his vicinity, to an appreciation of their bird-neighbors by conducting a Robin Census. Although elderly, occupied with cares, and handicapped by deafness, this man determined to pass on to others the joy of a knowledge of birds, a joy which had come to him late in life,—he writes: "I was fifty years old before I took great notice of birds,"—and accordingly he visited each of the three public schools of the city explaining his plan for taking a Robin Census in April. To quote his words: "The teachers and the boys fell in with it at once and there was much enthusiasm developed." Sterling lies along the north shore of Rock River and is about two miles from east to west, and one-half mile wide, making nearly a mile square, or 640 acres, fully covered with dwellings. Its population is nine or ten thousand.

The method employed in conducting the census was competitive. In each of the three public schools of the city a captain was named, under whom was a corps of young boys who did the counting, and reported the results to the captain. The count began at 5 A.M. when nearly all the Robins in the census area were on the ground feeding. Starting at the base of each avenue at the river, one boy on each side worked north to the city limits, in this way covering the area quite thoroughly. Making due allowance for errors in counting, the final result was thought to be a fair average since, while some birds may have been counted twice, it is probable that not every bird in the area was on the ground as the observer passed. The total count numbered 3,252 Robins. Mr. George P. Perry, the organizer of the census says that fully twice that number of Robins might have been seen in Sterling by June of the same year.

Of the three schools which took part in the census, Central School led with a record of 1,386 Robins; Lincoln School came next with 1,077, and Wallace School third, with 789. The largest single number recorded by any pupil was 164 and the smallest 18. Only four pupils observed over 100 Robins. Sixty-three boys took part in the contest. The interest created, however, extended far beyond the three schools immediately concerned, as the results of the census were printed in detail in one of the city papers, giving wide publicity

to this novel campaign. Reference has already been made to the Robin nest-census taken by pupils of the public schools of Worcester, Massachusetts, under the direction of Dr. C. F. Hodge. Bird-clubs and both Senior and Junior Audubon Societies can hardly do better than to follow these suggestive methods of practical work.—A. H. W.

JUNIOR AUDUBON WORK

For Teachers and Pupils

Exercise XXVII. Correlated Studies: School Gardening, Reading and Spelling

Feathers, Part III

In exercises XXIV and XXV, we took up the structure of feathers in as simple a way as possible, and also the different kinds of feathers. A review of the points there given will be helpful before going on with the subject matter of this exercise, namely molt and coloration with particular reference to the sexes.

Although the feathers of an adult bird in their perfection may appear to be immaculate and indestructible, we must remember that the strain and constant usage to which they are subjected in flight and the varied activities of the bird result in wear and tear quite similar to that of any clothing. The problem of renewing feathers is a more difficult one than that of renewing clothes, however, since a bird cannot well spare its plumage to be made over, or even spare it long enough to change to a new plumage. At all times, the bird must be protected from heat, cold, and moisture, so that the renewal of its feathers must be accomplished in such a way as not to seriously interfere with its life-activities. This is effected by a process known as *molt* (sometimes spelled moult), which means *changing* the feathers. The peculiarity of molt which distinguishes it from an ordinary exchange is that it takes place at certain periods, when old feathers are shed as new ones grow. A bird is never naked, except in some instances at birth, when it may be nearly so.

In order to follow clearly the different molts which birds undergo, let us begin with nestlings. In general, nestling birds are divided into two groups, according as they are naked or nearly so, or protected by a covering of down-feathers at birth. The words used to describe these two conditions look harder to spell and pronounce than they really are. Try writing on a blank sheet of paper the following table. Once learned, it will be a constant help to you in the study of birds.

Nestlings { Altricial, naked or nearly so at birth.
Nestlings { Præcocial, covered more or less thickly with down at birth.

NOTE.—Altricial birds are sometimes referred to as *nidicolous*, which means dwelling in the nest, and præcocial, as *nidifugous*, which means fleeing from the nest.

Plumage	Molt	Time
1. Natal Down	Postnatal Molt	Spring-Summer
2. Juvenal (nestling)	Postjuvenal Molt	Fall
3. First Winter Plumage	First Prenuptial Molt	Spring
4. Nuptial Plumage	First Postnuptial Molt	Fall
5. Second Winter Plumage	Second Prenuptial Molt	Spring

6. The sequence of plumages and molts follows by seasons in like order.

NOTE.—A few exceptions occur. The nestling plumage may be shed earlier in some species than in others. Most nestlings shed it very soon after leaving the nest. A few species wear it two or three months before changing to the first winter plumage, while a few others wear it until the prenuptial molt. Likewise, a few species do not attain the full nuptial plumage until the first postnuptial molt. The Scarlet Tanager and the American Goldfinch are familiar examples.

Again, nearly all birds make a complete change of feathers every fall, but Ducks and Ptarmigan, for special reasons of protection, undergo a more limited change at that time. If a Ptarmigan, for example, assumed its white winter plumage before the snow came, it would be a very striking object indeed. In the fall, therefore, it wears a transition plumage through September and October.

Just as in every other part of bird-study there is so much to learn that one is likely to become confused or discouraged, so in this matter of plumage and molt there are many unexpected points to observe and consider. For our purpose, however, it is sufficient to remember first, that there are two general groups of nestlings, those which are nearly naked at birth and require a long period of care in the nest before being able to fly and find food, and those which are well covered with natal down when hatched and require little attention from the parents; second, that every bird changes its plumage completely once a year at least; third, that some birds change their plumage twice a year completely, while others make only a partial change or no change at all, except what comes about by the wear and fading of their feathers; and fourth, that a few birds for special reasons of protection or ornamentation make additional changes at certain times of the year. It will lend enjoyment to your study of birds if you pay attention to the details of their dress from season to season. The more study one puts upon these matters, the more profit one gets. You may be able to recognize an adult male Goldfinch, but can you tell it in the winter, or can you tell a young male Orchard Oriole from an adult one or a young male Red-winged Blackbird from either the adult male or female? If you have colored pictures or charts in the school-room, or a museum close at hand, select a few groups of familiar birds and study their likenesses and differences with respect to plumage. Look at a young Robin or a young Bluebird in the juvenal plumage and then look at their parents, and also, at their relatives, the Thrushes. If it was not for the plumage of the young birds, you might not understand their relationship.

A few suggestions about the annual life-cycle of birds may help you to remember some of these difficult things. Let us take a pair of Robins, about

to build a nest in April, as an illustration of the sequence of plumages and molts. The adult Robins are in perfect *nuptial* plumage. They are about to build a nest, and to rear a brood of nestlings whose *juvenal* plumage, after the *natal down* is shed, will look very different from that of their parents. A second and sometimes a third brood may be hatched and reared, so that during the summer, by watching this single family, in two or three divisions, as the case may be, you can see Robins in all stages of *juvenal* and *nuptial* plumage. Before the regular migration south, there is a time when many birds are molting. It is a silent time, for birds sing little if any when changing their plumage. Fortunately for them, Nature has provided that they shed their feathers a few at a time and not too many at a time on any one part of the body or irregularly on the two sides, so that usually flight is not interfered with. Ducks are an exception, but the history of their changes of plumage is a story by itself. *Postnuptial* means *after* the bridal or mating season, as you see, and since our family of Robins is made up of both old and young, we shall be able to observe the *postjuvenal* molt of the young and the *postnuptial* molt of the parents during the early fall. Since the long migration journeys must expose a bird to unusual wear and tear of plumage, it is evidently advantageous to have new clothes before starting on these perilous trips. As a rule, birds molt before migrating, but again some exceptions occur. Through the winter, we have so few Robins venturing to brave the northern latitudes, that we may scarcely expect to see any before March. Our Robins in spring are wearing after the prenuptial and postjuvenal molt of the preceding fall, a "*first winter*" and *nuptial* garb, according to their age. It is very instructive to compare the nuptial plumage of the adult Robins with the "first winter" plumage of the young ones. All pair and nest, and by the next fall, having molted, no further difference in plumage is noticed, except in the nestlings of the season, which of course resemble the nestlings with which we started the preceding season.

We have already taken up briefly the most strikingly marked and colored *kinds* of feathers, but we have not considered the differences in color and markings of old and young birds, or of male and female birds. The reasons for the great variation in color and markings, not only of birds but of many other animals as well as plants, are far too complicated for our present study. We will simply learn that these variations occur and that we must, therefore, study the plumage of young and old birds as well as of male and female birds separately.

In many cases, the two sexes seem to be nearly or quite alike, as for example, the Blue Jay, Crow, Robin, and Grackle, although the young of some of these species may differ markedly from the adults. In other cases, one would hardly recognize a male and female as belonging to the same species if only the color of the plumage was considered. The Red-winged Blackbird, American Goldfinch, Towhee, Scarlet Tanager, and Baltimore Oriole are familiar examples. By observing the size, shape, bill, manner of flight, and habits, one can see the relation of the two sexes, but it takes careful study on the part of a beginner.

Young birds are usually colored more nearly like the adult female than the male. Few instances occur where the female is larger or more brilliantly colored than the male, a fact which helps many times. It is usually the male, also, who wears special ornaments in the mating season, though, as in the case of the Herons and Egrets, both sexes may be adorned. How far the necessity for protection, especially during the nesting-season, has influenced the coloration of plumage is not definitely known. Some male birds which are highly colored do not seem to be better protected or as well as their duller mates. Two men who worked a lifetime gathering together facts such as those about the coloration of plumage attempted to explain the variations which they observed in different ways. The names of these men you ought at least to know, Charles Darwin and Alfred Russell Wallace. Perhaps you can find pictures of them and learn something of their lives and the kind of books they wrote. Their *theories* are too advanced for you to study now, but as you near college age, you will look forward to learning many things which they wrote. It is interesting to know that what appears to be so simple an object as a bird's feather is so intricate and hard to explain, even by men of science.—A. H. W.

QUESTIONS

1. What creatures have a covering of feathers, fur, or scales?
2. Which of these three coverings is the most desirable for protective purposes?
3. Can you give examples of any birds whose plumage changes by wear? By fading?
4. What is the 'eclipse' plumage of male Ducks? How long is it worn?
5. Are you familiar with the male and female Purple Finch or Rose-breasted Grosbeak and Indigo Bunting? Have you pictures of them?
6. Can you tell a young Starling from an adult female?
7. What birds have spotted breasts in juvenal plumage and plain breasts in adult plumage?
8. What highly colored males change to the color of the females after the nesting period? Do you think this change might be a protection to them as they migrate South?
9. Look up the derivation of altricial and præcocial. Reference: See Chapman's 'Handbook of Birds of Eastern North America,' pp. 84–90 and color-chart, p. 26.

SPELLING EXERCISE

natal	immaculate	molt	adult	metallic
postnatal	juvenal	iridescent	sequence	altricial
plumage	prenuptial	nuptial	coloration	præcocial

A. H. W.

FOR AND FROM ADULT AND YOUNG OBSERVERS

AN EXCEPTIONAL CASE

It is a well-known fact that birds like plenty of elbow-room in building their nests, which may make the following story interesting to Bird-Lore bird-lovers.

Close to the corner of our piazza, which is daily occupied by the family, are two small magnolia trees. Both a pair of Robins and a pair of Chipping Sparrows selected at the same time the same one of these two trees to build in. For two days there was continual war between the two pairs. Every time either pair would take possession of a particular crotch, the other pair would fight them off. About the third day, both Robins and Chippys seemed to decide that it was a drawn battle, each pair forsaking that particular tree for the second one a few feet away, and each pair of birds quietly and peacefully going to work nest-building in the second tree. The more interesting fact was that they placed their nests not more than a foot and a half apart from each other.

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Each pair seemed peacefully content, the young birds in either nest being hatched only one day apart. Feeding went on also in perfect peace.

When a week old the young Robins were destroyed by a squirrel or cat, and though the Chippy's nest was only a little more than a foot above the Robin's nest, the young Chippys were still being fed. The following day they too had disappeared, and the parent birds were sitting disconsolately about.—[Miss] Laura Vanderbilt, *Englewood, New Jersey.*

[Very few observations concerning the proximity of nesting birds, whether of the same or different species, are on record as compared with observations of individual nests. By selecting a small area and carefully inspecting the occupants of each tree, hedge or other site, much can be learned regarding the disposition and preferences of nesting birds. The writer once found three pairs of birds nesting in a single apple tree: a pair of Robins, a pair of Chipping Sparrows, and a pair of House Wrens, with two unoccupied or previously occupied nests, one of the Robin and one of the Sparrow.—A. H. W.]

OBSERVATIONS OF ADULT AND NESTLING ROBINS

I

Early in June a baby Robin fell out of its nest into the yard of my neighbor. The children picked it up and brought it into their house. They soon grew tired of feeding it. The next day the poor little Robin was given to my daughter. She was very happy to have the care of it. We put it on the scales and found it weighed three ounces. We fed it on worms and crumbs. It soon learned to open its mouth when a worm was held all ready to drop in.

At the first peep of day "Rob" made the most insistent chirps for food and would not be quiet until fed. After a week "Rob" became very tame. We had made a perch for him by putting a branch into a pail of sand. There he would sleep at night.

At this time our strawberries began to ripen and we took "Rob" out, and he would hop about and eat his fill of the ripe berries.

If he got out of sight we would chirp and he would answer and hop out so we could see him. He enjoyed this freedom very much. Soon he grew strong enough to fly as high as the pine tree. He rested on the lowest branch at first. On gaining courage he one day hopped clear to the top. This feat was something he was justly proud of. He chirped in answer to our calls to come down but he had gotten to the top of the tree and was perfectly satisfied. After much coaxing he hopped down and finally flew back to my hand. The next day this performance was repeated. After a day or two we knew he would be strong enough to take care of himself. He spent his nights in the house but all day he hopped about the strawberries.

One night he insisted on staying in the tree and sleepily chirped in answer to us but he had made up his mind to stay where he was. Then we knew he intended to take care of himself.

For a week after this every day he would fly down to us as we picked the berries, and after being fed, he would fly away. He stayed about all summer.

We had a vacation of two weeks in August, and on arriving home we called "Rob," "Rob," and chirped. He immediately answered us and we knew he was safe. He did not come to say good-bye when he went South, but we hope to see him again this summer.—Mrs. N. A. Wood, *Merrimac, Massachusetts.*

[The return of birds to their former nesting-sites or to the vicinity of their birth is a subject which has long aroused wonder on the part of observers. Careful records kept in limited areas ought to throw much light on the matter.

It is probable that when the young Robin described above made its initial exploration of the pine tree, the strangeness of its position and the unusual exertion of reaching it induced some fear and fatigue. All young birds the writer has had experience with exhibited like behavior in similar conditions.—A. H. W.]

II

The following may interest some BIRD-LORE readers. It is about Robins. Friday morning, June 12, about eight o'clock, I was walking down my yard and I noticed a Robin tugging at a worm. I watched it for about five minutes. It would try for the worm then stop and look around, then pick at something else. After a few minutes it got the worm and flew to a nearby fence. Then it walked along the fence looking around several times until it got within five or six feet of me. It then flew to the ground, walked over with the worm to where it had been at first, and looked at the thing which it was biting at, and then flew off. After it was gone I went to see what it was that it was looking so queer at and it was a dor bug (?).

Sunday, June 14, when I was coming home from church I heard a queer sound and I saw two Purple Grackles being chased by a Robin and they suddenly lit on an electric wire. One of the Grackles had a worm in its mouth that it had stolen from the Robin. When the Robin came and lit on the wire the Grackles flew off and the Robin just watched them.—FRANK B. WELLINGTON, *Medford, Mass.*

[The actions of all birds are interesting, none more so than those of our common birds. The Robin is a good bird on which to practise *continued* observation. Its notes, plumage, feeding-habits, nesting-habits, and actions are sufficiently varied to furnish instruction even to experienced students. On the morning of April 6 the writer saw a Blue Jay uttering sweet notes suggestive of the Catbird.—A. H. W.]

THE BLUE JAY

Oh Blue Jay up in the maple tree
Will you sing a song for me?
Oh you pretty little Blue Jay,
That comes in the month of May.
Oh Blue Jay so loving and true,
With your own sweet color of blue;
For you have the sweetest breast,
And four little eggs in your cozy nest.
Oh come and sing a song for me
Bright Blue Jay in the maple tree.
—MARGARET WARD (Age 9 years), *Grand Rapids, Mich.*

THE WAY BIRDS BUILD THEIR NESTS

One day as I was on the piazza I saw a bit of straw in the corner of the roof of the porch. I looked and looked until I saw a Robin come. It is a beautiful bird. Its crimson breast is magnificent. It is a graceful bird. It was bringing bits of straw, mud, hair, and feathers.

Two days after as I looked from my window I saw that the nest was all built. Four days later I took an extension-ladder andclimbed up to the nest. The mother bird was on the nest as I started to climb, but as I got up she flew away and I saw two small blue eggs. Next day as I looked in the nest I saw there were three eggs in it. Next day when I looked in the nest there were four eggs in it. Five days later when I looked in the nest I saw three small, dingy, wet birds. The mother then came with a worm in her mouth. She did not notice me but gave some of the worm to one of the birds. Then she gave some to the next and then to a third. The fourth egg was pipped and a little bird's head was out. The bird was alive. It was very weak.

In five days the mother threw the birds out of the nest. They had to fly to keep from falling. They gave a few feeble flaps. All were so surprised that they did not fall that they flapped and flapped until they were raised in the air. —Knox Kinney (age 9 years), *Tyngsboro, Mass.*

[Did the mother bird really "throw" the young birds out of the nest, or did they flutter and become uneasy and appear to be crowded out as she cleaned the nest or sought a place in it? This is a point for sharp eyes. Young Swallows stay in the nest until they seem to fill it and to actually overflow it, but when they take their initial flight they are not awkward or apparently afraid, for they fly with ease almost from the start. The young of most perching birds however, must learn something of their environment and test their own powers first, before flying with ease.

The contribution above is one of a considerable number sent from Tyngsboro, Mass., where an active Junior Audubon Society has been organized by the Grange as shown in the accompanying picture. This Society received the Educational Leaflets of the National Audubon Society through the Grange, one leaflet at a time, as the bird which it described arrived. Prizes of bird-books, games and nesting-boxes were also given by the Grange to the members of the Society for the best original paper on birds.—A. H. W.]

TWO DAINTY GUESTS

In the spring of 1912, my brother built a bird-house for me, out of a trunk of a small ash. It was about a foot long and six inches in diameter, hollowed out inside. We set it on top of a grape-arbor in the back yard. A male and female Wren discovered it and built a nest there. They would fly to the ground and gather string, sticks, grass, and pieces of straw to build their nest. I would sit very close to the little Wren-house and watch them sing. They sang very beautifully and did not seem to be a bit afraid of me. These dainty guests stayed in the house quite a long time and I was very glad to have them there. I love the birds and want to learn as much as I can about their habits. I am enjoying Bird-Lore very much. It will help me in my study of the birds.— Gladys Fanton (Age 13 years), *Good Ground, L. I.*

[There are two ways to observe nesting birds. One is to stay quietly by and watch what the birds do *without disturbing them,* the other is to look into their nests and to interfere more or less with the movements of the parents and young, by handling or otherwise disturbing them. For beginners the former method is preferable. Indeed most observers can learn what they wish to know by simply *watching.*—A. H. W.

PHOTOGRAPHING NESTING BIRDS

I have been observing birds for about a year. I live in a large city but near a grove of trees where I have had many chances for study.

One day while hunting for nests I found one with four baby Mockingbirds in it. The next time I went three had grown very much but one was little and had no feathers. The third time I went my mother went with me and we took a kodak. One of the birds was gone. I took the other three carefully out of the nest and placed them on my hand while the inclosed picture was taken. The mother bird hovered anxiously around, and came quite near. I put them carefully back in the nest and stepped back to see what the mother bird would do. She would not come to the nest while we were there. One of the birds tumbled out but we put it back. As we were going away the mother bird flew to the nest with something in her mouth.

I have observed the following birds this year:

Mockingbird, Dove, Scissor-tail, Hedge Sparrow, Field Lark, Wren, Hummingbird, Cardinal, Blue Jay, Chicken Hawk, Buzzard, Crow, Blackbird, Martin, Wild Geese, Chaparral (-cock), Mexican Canary. Heard but not seen: Whip-poor-will, Bob-white, Screech Owl. Three unidentified.—MARVIN HALL (Age 10 years), *Dallas, Texas*, Dec. 1915.

[Many times the question is asked whether it is wise to attempt to photograph nesting birds if one is an amateur photographer. Even with the greatest care accidents or mishaps may occur, which makes it seem doubtful. The writer once permitted a student to take a baby Spotted Sandpiper from the nest to photograph. The sun was hot on the exposed sand-spit where the nest was located, and, although the time of making the picture seemed short, the little Sandpiper died within a few hours, since the timid parents failed to return to the nest promptly enough to shelter it from the heat. Certain species have less fear than others, which makes the operations of photography easier, but even an expert must exercise the greatest care and endless patience to secure pictures without injuring the nestlings. Young birds which are about to fly, if disturbed, will usually flutter from the nest and fall, while the excitement of being handled is often dangerous. In the case of such large species as the Osprey, which stays weeks on the nest before attaining the power to fly, one may approach the open, exposed nest and stroke the nestlings, if careful not to make sudden movements, provided the parents do not interfere. In general, however, it is best to avoid handling nestlings. A picture of the nest with the sitting parent, or of the parents and young after the latter have left the nest, may sometimes be secured advantageously.

Certain suspicious species, like the Goldfinch, may abandon a newly made nest if it has been disturbed, even during their absence.

The foregoing communication bears a double message, therefore, for while it describes a successful bird-photograph, it also suggests the danger of disturbing nestlings by exciting them so that they fall out of the nest.—A. H. W.]

CAUGHT IN A SHOWER

"These members of the 'Wake Robin' Club in Philadelphia are wearing hats improvised by themselves. Caught in a heavy rain during a bird walk,

TWO MEMBERS OF THE 'WAKE ROBIN' CLUB

we begged some wrapping paper at a way station and the girls in the picture explain the rest."—Clara J. Clair, *Philadelphia.*

[Only those observers who go afield rain or shine, know the real joys of bird-study There comes to mind a sudden wild, blustering squall off Lake Michigan, when Lincoln Park in Chicago was thronged with migrants. In a few moments, a bright, spring morning became overcast, and a strong wind with rain literally dashed from all quarters. A flock of Grackles barely breasted the storm, perched thickly in a half-leaved tree. Robins rudely swept from the turf, struggled to keep sufficient balance to enable them to flutter into the nearest shelter, while small birds of many species vanished almost as if by magic. The writer, huddled underneath an insignificant tree near the entrance to a road-tunnel, and hanging desperately to a wrenching umbrella, was amazed to find at close quarters, several birds, the rarest of which was a Blue-headed Vireo. While the squall lasted, and escape was dangerous, fear of their human companion seemed to be wanting, or, more probably, to be lost in the suspense created by the havoc-making elements. As the wind subsided and tossing branches ceased snapping, the birds quickly regained their normal attitudes and betook themselves to more remote quarters. It is one thing to look at a bird through field-glasses with the sun at one's back and quite another, to look it squarely in the eye in the teeth of a gale.—A. H. W.]

AN OPPORTUNITY FOR HELPFUL EXCHANGE CORRESPONDENCE

I am forwarding to you under separate cover three school papers, and the supplement of the official organ of the Education Department of South Australia. They may interest some of your members, in so far as they indicate the steps we are taking in our schools to educate the 'young idea' up to bird protection.

What are our American cousins doing in this direction? Could any of them send a written message of encouragement, to be printed in the Children's Hour in this state? I'm sure our boys and girls would be most appreciative. Yours sincerely.—Alfred Geo. Edquist, *Adelaide High School, Education Department, Adelaide, South Australia.*

[A request coming from so distant and so attractive a country as Australia ought to find a ready response from the boys and girls of Bird-Lore's School Department.

Observation of bird-life in any part of the world is attractive, but on a continental island like Australia, occur some species not found elsewhere, unless, in exceptional cases in remote ages of the past. An exchange bureau of observations between America and Australia is a fine idea. How many of our readers will volunteer exchange observations?—A. H. W.]

A DELAYED COMMUNICATION

List of Herbs Raised by Revillo Wetherbee (age 10 years), Lyndon, Vt.

Anise:
For garnishing.
Sweet Basil:
For seasoning.
Borage:
Excellent for bees.
Coriander:
For garnishing.
Dill:
For use in pickles.
Florence Fennel:
For use in salads.
Horehound:
For medical use.
Lavender:
For perfume.
Sweet Marjoram:
For seasoning.
Rosemary:
For seasoning.
Sage:
For dressing.
Summer Savory:
For seasoning.
Thyme:
For seasoning.
Wormwood:
For medical use.
Parsley:
For garnishing.
Celery:
Vegetable purposes.
Caraway:
Used in cakes.
Catnip:
For seasoning.
Small Peppers:
For seasoning.

[By referring to Bird-Lore, Vol. XVIII, No. 1, page 48, a picture of the herb-garden described above will be found. Master Wetherbee adds:

"I am writing to thank you for sending me the copy of Bird-Lore. I was very much pleased with it. I inclose list of herbs and their uses. I planted them out the twentieth of May, and harvested them around the last of September."—A. H. W.]

THE REDSTART

By T. GILBERT PEARSON

The National Association of Audubon Societies

EDUCATIONAL LEAFLET NO. 86

Of all our Warblers, extremely active birds though they are, not one displays so many different motions in one short minute as a Redstart. It dashes to and fro, up and down, in and out of the shrubbery, hither and yon, with infinite variety of movements, like some brilliant, intoxicated butterfly, whose exuberance and energy are utterly boundless. It is a small bird, only about four and three-quarters inches long, but by its song and activity it keeps itself much more in evidence than many a bird twice its size.

"*Ching, ching, chee; ser-wee, swee, swe-e-e* he sings, and, with wings and tail outspread, whirls about, dancing from limb to limb, darting upward, floating downward, blown hither and thither like a leaf in the breeze. But the gnats dancing in the sunlight and the caterpillars feeding in the shade of the leaves know to their sorrow that his erratic course is guided by a purpose." So writes Frank M. Chapman.

All during the song-season the male Redstart makes his presence known, for he is an unusually constant singer and may be heard at almost any time of the day. Some observers say he has two distinct songs, others say he has three, while still others aver that the bird has as many as five or six. Gerald Thayer, I believe, is authority for the statement that about his home at Monadnock, New Hampshire, the Redstarts have what he considers three comparatively constant songs, which serve as the basis for all other varieties of their music.

For my part, I have found the Redstart's song to be bewildering and difficult of identification more times than I care to admit. When, in spring, I find myself in a locality where Warblers are singing, if I can remain there a day or two and find what species are in song, and watch, and think hard, my memory is at length refreshed to the extent that I soon begin to feel sure of distinguishing the Redstart's tune with some degree of confidence. Others have at times guardedly hinted that they have experienced similar difficulties in remembering from year to year the Redstart's notes. It is certainly true that to any but those with particularly gifted ears the song of this bird lacks any striking characteristic, such as we all readily recognize in that of many others, the Ovenbird, for instance, or the Wood Thrush.

The nest of the Redstart is made of leaf-stalks, thin strips of bark, plant down, and similar soft vegetable materials. Usually it is lined with fine rootlets or delicate tendrils. Apparently it is always placed in the crotch of a sapling two to fifteen to twenty feet from the ground. One favorite situation, in which I

REDSTART

Upper figure, female. Lower figure, male.

Order—PASSERES
Family—MNIOTILTIDÆ
Genus—SETOPHAGA
Species—RUTICILLA

National Association of Audubon Societies

have often found the nest, is between a small branch, little more than a twig, and the main stem of the tree, often as much as three inches in diameter. In such positions the nests were frequently in plain view—after they were once discovered. Sometimes, however, the nest is so well hidden that it may be discovered only after a most careful and prolonged search.

The four or five eggs are white, variously blotched and spotted with brown and gray, thus resembling those of the yellow, or summer, Warbler. They measure about sixty-five hundredths of an inch long by fifty hundredths wide.

A MOTHER REDSTART AND HER NEST

Last spring it became apparent that a pair of Redstarts had a nest hidden somewhere within the recesses of a certain limited growth of saplings near our summer camp on Lake Champlain. Spying on the birds and watching their movements proved fruitless, the thick foliage blotting out all vision of the female in every instance when she was seen approaching. As for the male, he sang daily and hourly, and almost every ten minutes, from his perch on a large tree nearby. At length every sapling was searched in turn, until the nest came in sight hidden by the leaves in a crotch twelve feet from the ground.

"The young males of this species," Audubon notes, "do not possess the brilliancy and richness of plumage which the old birds display until the second year, the first being spent in the garb worn by the females; but, toward the second autumn, appear mottled with pure black and vermilion on their sides. Notwithstanding their want of full plumage, they breed and sing the first year like the old males."

Mr. E. H. Forbush, in his book "Useful Birds and their Protection," has written:

"The insect-food of the Redstart is perhaps more varied than that of any other common Warbler. Apparently there are few forest insects of small size that do not, in some of their forms, fall a prey to this bird. Caterpillars that escape some of the slower birds by spinning down from the branches and hanging by their silken threads are snapped up in mid-air by the Redstart. It takes its prey from trunk, limbs, twigs, leaves, and also from the air, so that there is no escape for the tree insects which it pursues, unless they reach the upper air, where the Redstart seldom goes, except in migration. It has been named the fly-catcher of the inner tree tops, but it is a fly-catcher of the bush tops as well.

"While there are few small pests of deciduous trees that it does not eat in some form, it is not confined to these trees, but forages more or less among coniferous trees. Also it is seen at times in orchards, and gleans among shade-trees in localities where the woods are cut away. It is impossible to weigh the pros and cons of this bird's food, for no thorough examination of it has ever been made. It is an efficient caterpillar hunter, and one of the most destructive enemies of the smaller hairy caterpillars. It catches bugs, moths, gnats, two-winged flies, small grasshoppers, and beetles. It probably secures a larger proportion of parasitic hymenoptera and diptera than most other Warblers, occasionally destroying a few wasps; otherwise, its habits seem to be entirely beneficial."

The summer home of the Redstart extends as far northward as Labrador and southern Alaska; in fact, it goes almost to the limit of tree-growth throughout Canada. The southern boundary of its breeding-range may be roughly traced by a line extending from the North Carolina Mountains to Utah, and thence northwesterly to northern Washington. In a few cases, breeding birds have been found south of this area, for its nesting has been reported at Greensboro, Alabama; Hopefield, and Jackson, Mississippi; and at Fort Union, New Mexico.

As this species is highly insectivorous in its feeding habits, it of necessity must depart from the land of frost upon the approach of winter. Therefore, Redstarts migrate southward through the Southern States. Many in the East follow down the peninsula of Florida, and then across to Cuba, Haiti, and others of the West Indies Islands, where they pass the winter. The larger number, however, reach the sea at various points along the west coast of Florida, Mississippi, Louisiana, and eastern Texas. Here they pause only long enough to supply themselves well with food, and then at the close of day start out boldly across the Gulf of Mexico. Their journey to Yucatan or to western Cuba is made in a single night, although the distance is from five to seven hundred miles.

Many of the Warblers pass their winter on the eastern shore of southern Mexico and Central America, although numbers of others push on by the

land-route to northern South America. Here they remain, living luxuriously on the insect-life that inhabits the Tropics, until the spell of the mating-season begins to come over them. Then, following the general lines of the migration-routes by which they went south, they turn their wing-beats back toward the northern United States and Canada.

Here are some of the dates when Redstarts have been known to reach different points along the Atlantic seaboard during their spring migration: Southern Florida, April 3; Atlanta, Georgia, April 6; Englewood, New Jersey, April 26; Portland, Connecticut, May 3; Durham, New Hampshire, May 10; Nova Scotia, May 21. From this it would appear that it takes about six weeks for the birds to journey from southern Florida to their summer home in southern Canada. Of course, they could make this trip much more quickly if it were necessary, but they follow the opening of the spring and the consequent reappearance of insect-life.

Somewhat similar facts have been recorded of the coming of the Redstarts that pass up the Mississippi Valley, as are indicated by the following dates of the first appearance at different localities along the inland route: New Orleans, Louisiana, April 5; St. Louis, Missouri, April 17; Oberlin, Ohio, April 27; Lake Forest, Illinois, May 3; Columbia Falls, Montana, May 20.

As the Redstart is a beautiful, attractive, and exceedingly useful bird, it is perfectly apparent that the legislatures of the various states, as well as Congress, have been wise in enacting laws for its protection. In virtually every state where the Redstart is found, the so-called Audubon Law has been written on the statute books. No one should ever kill a Redstart.

The Painted Redstart (*Setophaga picta*) is a closely related species, which is mainly Mexican in its habitat, but appears north of the Mexican border in southern Arizona and New Mexico. It has a gaudy beauty—lustrous black, with a large white patch on the wings, white edging on the tail and the middle of the breast, and abdomen rose-red. It occupies the valleys and cañons among the foot-hills of the mountains, where a sparse growth of oaks seems to favor its habits. "Their motions," H. W. Henshaw writes of these birds, "are almost an exact reflection of those of the common Redstart, which they so much resemble in form. With half-shut wings and outspread tail, they pass rapidly along the limbs of trees, now and then making a sudden dart for a passing fly, which secured, they again alight and resume their search."

Mr. Henshaw was unable to find the nest of this Redstart; but it is now known to be placed on the ground, usually concealed under some overhanging stone or stump amid shrubbery, and preferably in a stream-bank. The nests are made of finely shredded materials and lined with hair. The eggs are white, dotted with reddish brown.

The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, Secretary

Address all correspondence, and send all remittances for dues and contributions, to the National Association of Audubon Societies, 1974 Broadway, New York City.

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Any person, club, school or company in sympathy with the objects of this Association may become a member of it, and all are welcome.

Classes of Membership in the National Association of Audubon Societies for the Protection of Wild Birds and Animals:

$5 annually pays for a Sustaining Membership
$100 paid at one time constitutes a Life Membership
$1,000 constitutes a person a Patron
$5,000 constitutes a person a Founder
$25,000 constitutes a person a Benefactor

HONOR TO WILLIAM DUTCHER

About five and a half years have now elapsed since William Dutcher, President of this Association, was stricken with paralysis. During all this time he has been unable to speak or engage in activities of any character. His mind is, in many ways, as clear as ever, and he follows with the keenest interest every effort of the Association. He reads continually, and by his gestures frequently communicates his desire to Mrs. Dutcher, his sister, or his attendant, that he wishes cut from a newspaper or magazine that he has been reading some note in reference to the protection of wild birds or animals.

To those who have lately come into the field of wild-life conservation, the great work of Mr. Dutcher should be told again and again. It was he who gave life and purpose to the National Committee of Societies, twelve or fifteen years ago; and, largely due to his energy and foresight, the National Association was organized eleven years ago last January. The people of America owe him a debt of gratitude which can never be repaid.

This feeling of appreciation of Mr. Dutcher is felt by thousands of persons throughout the country, who have never told Mr. Dutcher a word about it. I wish to take this opportunity to say to the members and friends of the Association, that anyone who feels disposed to write him a letter at any time may feel assured that their messages will be received by Mr. Dutcher with the greatest pleasure. If anyone doubts that a letter from an old friend, or from any bird-lover, although unknown to him personally, gives him the keenest joy, this doubt would be dispelled should they visit him and see him produce from his pocket cherished communications of this character. The least we could do for him would be to send him a few words of good cheer and encouragement.

Mr. William Dutcher, whom we may rightfully call the Father of American bird-protection, may be reached by letter at 949 Park Avenue, Plainfield, New Jersey.—T. GILBERT PEARSON.

A General Index to Bird-Lore

An index to the file of BIRD-LORE has been greatly needed, and it is gratifying to announce that one is now ready for publication. It embraces volumes I to XV, inclusive, and its references record not only the names of birds, but the name of every contributor, all articles (by quoted title), and general topics. The illustrations are

analytically indexed, that is, a reference is given to every separate figure where more than one occurs on a plate, and if it is in colors that fact is noted. Finally all books and magazines reviewed are indexed. This document, therefore, besides its primary purpose, is virtually an alphabetic record of progress in bird-study and literature since the opening of the century. This index has been compiled by Ernest Ingersoll, and will be sold at the office of this Association at 50 cents, net.

CONTROL OF CATS IN MONTCLAIR

It will be recalled that an educational campaign in regard to vagrant cats in Montclair, New Jersey, during the spring and summer of 1915, resulted in a municipal ordinance that attracted wide attention by its novelty both of purpose and of method. Many persons in other towns have been watching hopefully this experiment in controlling a menace to bird-life; and it will therefore be of interest to show what has been accomplished under it thus far.

The Montclair ordinance prohibited "vagrant or unidentified" cats to be at large; ordered that a cat shall be regarded as vagrant "unless it bears a tag furnished (at cost) by the town clerk, or a collar bearing the owner's name and address;" and provided regulations for disposing of vagrant cats. This solved the problem of "protecting the household pet, while permitting the destruction of the outlaw." A later ordinance provided for the appointment of an animal warden, who was required to give his entire time to the enforcement of the dog and the cat ordinances, to the keeping of the pound, the making of a census of the dogs and cats of the town, and the destruction of those not duly licensed or identified. This warden's house-to-house investigation has resulted in the tagging of many cats, and in the destruction of many vagrants. Already the amount of his salary has been returned to the town in license-fees, etc. After duly warning citizens, and explaining to them tactfully the purpose and utility of the ordinances, he began a systematic campaign for the destruction of vagrant cats. On the request of a property-owner he sets a trap on the premises and removes the unidentified cats taken. Any cat duly tagged is at once released unharmed. The plan is locally considered a success, and a bill is now before the New Jersey State Legislature to give broader powers to towns and municipalities in coping with the evil.

OMAHA'S CEMETERY-SANCTUARIES

One of the immediate results of a recent enthusiastic meeting of bird-lovers in Omaha was the formation of a local Audubon Society, whose first effort was to establish the cemeteries of the city as bird-sanctuaries. Superintendent H. S. Mann, of the great Forest Lawn Cemetery, had previously been in correspondence with the National Association, and announced that arrangements to that end were under way at Forest Lawn. It was announced that the Prospect Hill and another cemetery would do the same. Prizes are to be offered to the boys of the manual-training classes in the city schools for the best bird-houses, feeding-tables, etc., made for placing in these cities of the dead. The newspapers and city authorities are lending help and strength to the work. "The Audubon Society of Nebraska," remarks the *World-Herald*, editorially, "is making a strenuous effort to increase its junior membership throughout this city and state, which means that there will be many delightful 'field days' in the woods during the summer weeks, and that the feathered folks will discover themselves welcome indeed in these parts. Several bird-clubs have already been organized, and the campaign seems sure of success."

SOME PRIZE PHOTOGRAPHS

DOWNY WOODPECKER AND WHITE-BREASTED NUTHATCH EATING SUET FROM HOLES IN BARK
Photographed by Wm. B. Hoot, of Rochester, N. Y. First prize in 1916 Bird-Photograph Contest

OREGON JUNCOS AND A VARIED THRUSH AT A WINDOW SHELF
Reduced from a Photograph by A. L. Campbell, Multnomah, Oregon. Third prize

SONG SPARROW AND GOLDEN-CROWNED SPARROW AT FEEDING-TABLE.
Photographed by Ametra S. Allen, Berkeley, California. Fourth prize

A CHICKADEE WEIGHING HIMSELF AFTER HIS CHRISTMAS DINNER
Photographed by Mrs. Granville Ross Pike, North Yakima, Wash. Second Prize

CALIFORNIA QUAILS
Photographed by Wm. Webb, Jr., Salt Lake City, Utah. Tenth prize

CHICKADEE FEEDING AT A DISCARDED CHRISTMAS TREE
Photographed by Harriet S. Rider, East Norwalk, Conn. Seventh prize

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Total	$2,482 51

A BEQUEST FROM A MEMBER

The Association recently received a bequest of $500 from the estate of Miss Rose Hollingsworth, of Boston, Massachusetts, who died in December, 1915.

Miss Hollingsworth had been a member of the Association since 1905, and this evidence of her interest in the cause of the protection of wild life was but a final expression of her loyalty to a work in which she had so long taken an active part.

As is the custom of this Association, in the matter of bequests, this sum will be placed in the permanent Endowment Fund and the interest only will be used from year to year.

NOTES FROM MANY FIELDS

Improvement in Mississippi

The Legislature of Mississippi has passed an amended fish-and-game law, under the leadership of Representative W. J. Spears, which is an advance as compared with previous legislation, yet leaves much to be desired. Turkey gobblers may be shot, not to exceed twenty in one day, between November 15 and May 1, but Turkey hens are protected for five years. Doves are still 'game-birds' from July 1 to October 1, and Bob-whites from November 15 to February 15. No game may be sold in the state or shipped out of the state at any time. An attempt to tax dogs failed, although it was shown that Mississippi was supporting 700,000 dogs, mostly worthless curs, and that these were not only destructive of poultry and sheep, and one of the means of the spread of foot-and-mouth disease, but annually destroyed two million dollars' worth of Quails.

Bird Day Celebrated

More and more it is becoming the custom for state officials to declare Bird Days in the public schools. Notices of such days, set apart as special times for the consideration of the utility of birds to man, have come to our attention this spring from the following states:

Alabama.—Superintendent Flagin set aside May 5 as official Bird Day for the public schools of Alabama.

California.—Conservation, Bird, and Arbor Day, March 7. Set aside by the State Superintendent of Education.

New Hampshire.—The Governor issued a proclamation making April 14 Bird Day.

New Mexico.—Governor William C. McDonald proclaimed March 31 and April 14 as Arbor and Bird Days.

New York.—The Governor proclaimed April 14 as Bird Day. This is a bit later than in 1915, which was the first year this celebration was held.

Oklahoma.—State Superintendent R. H. Wilson announced April 14 as Bird Day. Oklahoma has observed this date for several years.

Texas.—Governor Ferguson issued a proclamation designating April 3 as Bird Day.

Minnesota.—Governor J. A. A. Burnquist issued a proclamation making April 28 Arbor and Bird Day.

Robin-Killing Continues

The ruthless slaughter of Robins continues in central Kentucky and Tennessee, in spite of both law and gospel, although the law has been visited upon a few of the depredators, thanks to the energy of local bird-lovers. One case, at least, in Kentucky, is likely to meet with suitable punishment, for the culprit confessed that he had sold 121 dozen to his neighbors, and had stuffed a feather-bed and some pillows with the feathers of his little victims. A vast "roost" existed near his home in Whitely County.

Another great Robin roost was found southwest of Whitely, in Tennessee, and the slaughter there is described by W. S. Bryan, of Rugby, Tennessee, who says:

"Raiders from Fentress have been crossing Clear Fork of Cumberland into this county at night, and killing many of the birds on their roosts along White Oak Creek, almost within the very precincts of this town, but no arrests had been made until last night when nine of the raiders were caught with the goods on them. They had more than sixty birds in their sacks, so that the fines will amount to over $300, the penalty being $5 for each bird. The guilty parties, being well known, were allowed to return home on their own recognizance, but the fines will undoubtedly be enforced, as both the state and federal authorities are determined to put a stop to these cruel and lawless proceedings. The prosecution of the cases will be supervised by the officials of the Audubon Society, who have these matters in charge."

Upon learning these facts, the Association immediately telegraphed its local representatives to take up the matter, and it is sincerely to be hoped that the people of that region will be taught such a lesson

A FISH HAWK'S FAMILY
From an etching by Will Simmons

by the courts that they will let the Robins alone hereafter, lest something worse happen to them.

Bird-Study in Michigan

Most of the universities and larger colleges maintain summer schools at which biology is taught in a more or less practical way, and these often afford excellent local opportunities to bird-students. One of the most notable of these vacation courses is that to be had at the Biological Station of

A RED-HEADED WOODPECKER
Photographed by Alice H. Olds, Decatur, Ill.
Fifth prize in this year's contest.

the University of Michigan. This is situated in Cheboygan County, Michigan, between two lakes in a wild country, where nature is little affected by civilization. The course is in charge of Professor M. M. Ellis, of the University of Colorado, and is conducted mainly by field-work, with the advantage of opportunities for instruction in other branches of natural history. Full particulars may be obtained from the Secretary of the University, at Ann Arbor, Michigan.

The New "Blue Bird"

The *Blue Bird* magazine, which was founded and edited for several years by Doctor Eugene Swope, of Cincinnati, has passed into the hands of Mrs. Elizabeth C. T. Miller, President of the Cleveland Bird-lovers' Association. Three issues have appeared under its new management, and the high standard that is being maintained is sufficient to explain its continued success. We bespeak for it the heartiest support of bird-lovers everywhere.

Bits of Cheering News

Mr. Henry Cæsar and some other members and friends of the National Association, purposing to organize a bird-club at Rumson, New York, where they have summer residences, prepared the way by sending all over that neighborhood a notice of this intention, and instructions as to putting up bird-houses early in the spring, in advance of the assembling of the families of summer residents. This forehanded example is worth following.

The Natural History Society of Harrisburg, Pennsylvania, has on hand a bird-house contest, partly open to everybody in that city and vicinity, and partly confined to school-children. Prizes are offered: (1) ten dollars in gold for the most bird-houses occupied by birds other than English Sparrows; (2) a silver cup to the school producing the best essay from personal observation by a pupil; (3) a silver cup for the best-constructed bird-house.

The people of Buck Hill Falls, Pennsylvania, have made a bird-sanctuary in their village, and have arranged to have a 'Bird Week' annually. This year, April 17 to 24 was set apart as "a restful period, with opportunities of getting acquainted with our feathered protectors and the early spring flowers, and of seeing Nature in her great transforming act."

Mr. Rufus Stanley has been conducting an elaborate system of reports on bird observation from school-children, in Chemung County, New York, which has aroused strong local interest. The *Star-Gazette* of Elmira offered a long list of cash-prizes in a bird-house contest, and a surprising number of good boxes resulted.

1. PIPIT, winter
2. PIPIT, summer
3. SPRAGUE'S PIPIT
4. ALASKA YELLOW WAGTAIL
5. DIPPER

(One-half natural size)

Bird-Lore

A BI-MONTHLY MAGAZINE
DEVOTED TO THE STUDY AND PROTECTION OF BIRDS
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. XVIII JULY—AUGUST, 1916 No. 4

The Birds of Monument Valley Park, Colorado Springs, Colorado

By EDWARD R. WARREN, Colorado Springs, Colo.

COLORADO SPRINGS is one of the most fortunate places in the country in its possession of a system of parks which cities of many times its size would be proud of and glad to own. We owe this largely to the generosity of one of the founders of the town, one may say *the* founder, General Wm. J. Palmer, who, in the last years of his life, gave two large tracts of land, laid out in completed parks, besides roads and mountain trails, to Colorado Springs, together with funds toward their maintenance for a certain period—a magnificent gift. The present article has to do with but one of these tracts, known as Monument Valley Park, a long, narrow strip on the west side of the city, traversed its entire length by Monument Creek, which flows in a southerly direction. The length of this park, from end to end in an airline, is a trifle over two miles, its greatest width about a thousand feet, while in places it is less than half that. The western boundary, which is the right of way of the Denver & Rio Grande Railroad, is quite regular, but the eastern is the reverse and much broken. The ground is all the comparatively level flat or plain forming the banks of the stream, which flows in a channel or bed ten or twelve feet deep. Normally there is but little water in this stream, but heavy rains have filled it at times and even caused it to overflow its banks. These rises are always very sudden and come from the violent storms in summer known as "cloud bursts." Because of these floods, it has been found necessary to protect the banks with riprap and concrete retaining walls.

The northern half of the tract has been left much as it was originally, so far as the trees and shrubs are concerned, though of course walks have been laid out, and ponds excavated, and additional trees and shrubs, with a few flower beds, have been planted. It is this portion, which is not far from my home, where most of my observations have been made, and which is shown on the accompanying map. The southern half is somewhat more formally laid out,

though all the original trees were left, as far as possible. These trees were broad- and narrow-leaved cottonwoods and willows; there were also wild cherries and various shrubs. In places these latter form dense thickets, often overgrown with clematis. Maple, elm, spruce and cedar trees have been planted, and many flowering shrubs, such as lilac, snowball, etc. The park authorities have placed feeding-tables at intervals through the park, and in winter these are supplied with suet and seed. Altogether, it is a splendid place

SCENE IN MONUMENT VALLEY PARK.—SUMMER

for birds, and the list of species I have observed there myself now numbers 103, over a third of the total number of species recorded for El Paso County. This list is as follows:

Mallard. Migrant; early spring.
Green-winged Teal. Migrant; spring and autumn.
Blue-winged Teal. Migrant; spring and autumn.
Pintail. Migrant; spring.
Shoveler. Migrant; spring.
Lesser Scaup. Migrant; spring and autumn.
Bufflehead. Migrant; spring.
Ruddy Duck. Migrant; spring.
Black-crowned Night Heron. Migrant; spring.
Least Sandpiper. Migrant; spring.
Solitary Sandpiper. Migrant; spring and late summer.
Spotted Sandpiper. Summer resident.
Ring-necked Pheasant. Resident; introduced.
Mourning Dove. Summer resident.
Turkey Vulture. One seen flying over.
Sharp-shinned Hawk. Casual; spring and summer.

Western Redtail. Seen flying over.
Rough-legged Hawk. Seen in winter.
Pigeon Hawk. Seen in autumn and winter.
Sparrow Hawk. Summer resident.
Kingfisher. Spring, summer and fall.
Batchelder's Woodpecker. Occasional; winter.
Red-headed Woodpecker. Summer resident.
Lewis's Woodpecker. Occasional.
Red-shafted Flicker. Resident.
Western Nighthawk. Summer.
White-throated Swift. Occasional; spring.
Broad-tailed Hummingbird. Summer.
Kingbird. Summer resident.
Arkansas Kingbird. Occasional; summer.
Say's Phoebe. Occasional; spring, summer and fall.
Olive-sided Flycatcher. Migrant; spring.
Western Wood Peewee. Summer resident.
Traill's Flycatcher. Summer.
Least Flycatcher. One seen.
Desert Horned Lark. Seen in winter.
Magpie. Winter resident; known to have nested once.
Long-crested Jay. Occasional in winter.
Woodhouse's Jay. Occasional in winter.
Piñon Jay. Seen flying over; fall and winter.
Bobolink. Spring; seen two different years.
Cowbird. Spring.
Thick-billed Redwing. Spring.
Western Meadowlark. Spring, summer and autumn.
Bullock's Oriole. Summer resident.
Brewer's Blackbird. Summer resident.
Bronzed Grackle. Seen once in spring.
Western Evening Grosbeak. Occasional winter visitor.
Cassin's Finch. Occasional winter visitor.
House Finch. Resident.
House Sparrow. Resident; more common in summer.
Western Vesper Sparrow. Spring.
Western Lark Sparrow. Spring.
White-crowned Sparrow. Spring and autumn.
Gambel's Sparrow. Spring and autumn.
Western Tree Sparrow. Winter resident.
Western Chipping Sparrow. Spring, summer and autumn.
Clay-colored Sparrow. Spring, rare.
Brewer's Sparrow. Spring, rare.
Intermediate Junco. Winter.
Shufeldt's Junco. Winter.
Montana Junco. Winter.
Pink-sided Junco. Winter resident.
Gray-headed Junco. Winter resident.
Mountain Song Sparrow. Winter resident
Lincoln's Sparrow. Spring.
Mountain Towhee. Summer resident; also seen in winter.
Green-tailed Towhee. Spring; probably summer resident.
Black-headed Grosbeak. Summer resident.
Lazuli Bunting. Summer resident.
Western Tanager. Spring.
Barn Swallow. Spring and summer.
Tree Swallow. Seen in spring and summer.
Violet-green Swallow. Spring and summer.
Rough-winged Swallow. Spring and summer.
Northern Shrike. Winter resident.
White-rumped Shrike. Spring.
Western Warbling Vireo. Summer resident.
Plumbeous Vireo. Seen in spring.
Virginia's Warbler. Seen in August.
Orange-crowned Warbler. Spring.
Yellow Warbler. Summer resident.
Audubon's Warbler. Spring and autumn
Grinnell's Water-thrush. Once seen in spring.
MacGillivray's Warbler. Spring.
Western Yellowthroat. Spring.
Pileolated Warbler. Spring and autumn.
Catbird. Summer resident.
Brown Thrasher. Spring and in August.
Rock Wren. Once in spring.
Western House Wren. Summer resident.
Long-tailed Chickadee. Winter visitor.
Mountain Chickadee. Winter visitor.
Ruby-crowned Kinglet. Once in October.
Townsend's Solitaire. Winter visitor.
Olive-backed Thrush. Spring migrant.
Alaska Hermit Thrush. Spring migrant.
Audubon's Hermit Thrush. Spring migrant.
Western Robin. Summer resident.
Mountain Bluebird. Occasional in spring and summer.

Besides the preceding, the following named birds have been reported as seen by others: Wilson's Snipe, Long-eared Owl, Aiken's Screech Owl, Western Horned Owl, and Dipper.

THE WINTER BIRDS

Some of the winter birds mentioned here are true winter residents in the park, spending that season there; others are merely casual or occasional visitors, in some cases having been noted but once or twice, and in other cases are of irregular occurrence in different years. As might be expected, Tree Sparrows and Juncos are the most abundant, no less than five sorts of the latter birds having been noted, as the preceding list shows. The Pink-sided is the most common, with the Gray-headed next; the others are comparatively rare. These birds are together more or less, and spend a good deal of time about the food-tables, but also hunt for seeds in the grass and about the bushes. Their relative abundance varies somewhat, sometimes one being the more numerous, sometimes the other. The first Tree Sparrows sometimes come as early as September 22, and they are gone by April 15; while the first Juncos usually come early in October, but have been seen September 30, and have about all left by the middle of April though once noted on the 27th. In December, 1913, we had an unusually heavy snowfall and for a time the Sparrows and Juncos were rather scarce, but returned as the snow disappeared.

CATBIRD

One or two Song Sparrows spend the winter, and are somewhat exclusive, not associating much with the other birds, though I have seen them at the tables occasionally. Other members of the Sparrow family are the House Finch, Cassin's Finch, Evening Grosbeak and Pine Siskin. With the exception of the first named, which is a permanent resident in town and in the park, these are all extremely irregular, sometimes very abundant, sometimes

very rare. The last winter or two they have hardly been seen at all. House Sparrows are seen in winter, but more commonly in summer.

There are always some Red-shafted Flickers, and in early spring one sees an occasional "hybrid," with yellow wing and tail feathers of the Flicker, combined with the red mustaches of the Red-shafted. These winter Flickers are very likely birds from more northern localities, while the breeding birds in summer come from southern winter quarters. Once in a while a Batchelder's Woodpecker, our form of the Downy, is seen, but not often. I have yet to see

ROBINS AND NEST

a Hairy in the park, though it is really a more common bird with us than the Downy. Magpies come from the foothills and mountains to winter in the park; perhaps the suet on the tables has something to do with that. They arrive in September and October, and are gone early in April, sometimes the last of March. In 1914 a pair nested, to my disgust, for I am sure they must have done harm to the other birds nesting there. They are rather shy and do not care for a close acquaintance. Long-crested and Woodhouse's Jays are occasionally noted, and Piñon Jays have been seen flying over.

A Northern Shrike made his headquarters in the park for quite a while, one or two winters; an occasional bird hung in a bush testified to his activity. Both the Mountain and Long-tailed Chickadees are seen now and again, and sometimes seem to remain permanently for some little time, being observed regularly. Sometimes a Townsend's Solitaire appears. A Rough-legged Hawk

was once noted in January for two or three successive days, and Pigeon Hawks are not infrequently observed. Horned Larks have been seen rarely. There were at one time three Ring-necked Pheasants in the northern end of the park, a cock and two hens; one of the latter disappeared, and at present I am not at all sure if there is more than one bird left. They attempted to nest, but the nests were broken up or the young killed, possibly by cats.

MOUNTAIN TOWHEE

The winter life of the park, if not so varied as in summer, is always interesting, and the observer can always find some birds to study, and the fact that the birds vary much in numbers adds to rather than detracts from the interest; it gives a bit of chance to the game.

Usually in late February or early March the first Mountain Bluebirds and Robins come, and for a while there is a mixture of the first of the spring and the last of the winter birds, but presently the latter are all gone, except perhaps for a few belated stragglers.

THE SUMMER BIRDS

Under this head I include not only the true summer residents but also the migrants passing to and from their summer homes. Some of these migrants or visitors are summer residents in the mountains and foothills close by, and even on the plains, but do not find the conditions they desire for breeding within the park limits. As my list shows, several species of Ducks have been seen on the ponds and reservoir, and I am hoping to see more make the park a refuge and resting-place as the years go by. I have seen seven Mallards in one flock on a pond on a stormy March day. The Spotted Sandpipers come about the first week in May, and are gone by the middle or last of September. Last July I saw a pair with at least one young bird in downy plumage; I have always been quite sure they bred in the park, as they have been about every summer, but this is the first direct evidence.

It is difficult to say what are the most abundant summer residents in the park, though I suspect the Robin will probably head the list, at least one finds more of their nests than of any other species; but it is usually no trouble to find a Robin's nest, as they place them often in the most conspicuous places, and places which certainly show faith in mankind, as when one builds directly above a seat beside a much frequented walk, and another in a small spruce beside another walk and less than five feet above ground. I stood close beside this latter nest and watched the builder put some of the finishing touches to her house. Many of the older cottonwoods and willows have been trimmed in such a fashion as to leave flat stubs, grown about with twigs, forming "whorls," and these are favorite nest sites for Robins. One site was occupied for two seasons in succession; last spring it was vacant. No doubt, two broods are often raised.

Next to the Robins, the House Finches are abundant breeders, and their favorite nesting trees are the little spruces and cedars which have been planted

EVENING GROSBEAKS

liberally in the park. These little evergreens, now from four to seven feet high, have dense foliage, which usually conceals a small nest so well that one has to search closely, and investigate each individual tree, if he would make anything like an accurate census of the householders. I discovered a nest in 1915 in the same place where one had been in 1914, both evidently second nests, as they were found in July; and both were unfortunate, for I do not think a brood was raised either time. Tragedies occur; a friend showed me an old nest in which were the mummified remains of two or three nestlings.

Catbirds are abundant in summer, but they hide their nests so well in the dense tangles of shrubbery that it is practically impossible to find them. The birds are not afraid to show themselves, however, and may be seen courting and singing lovesongs. Brewer's Blackbirds also are common, but I have never happened to find one of their nests in the park, though six were located by a friend in 1915. When nesting, and especially, I think, when they are feeding young, they display much anxiety if an intruder comes around, and it is merely necessary to walk along a path to have one or more Blackbirds fluttering about, perching on bushes and trees and making a fuss generally. If you are quick with your camera, you may catch a good pose or two.

These four species are probably the most numerous breeders, but there are always one or more pairs of other species raising families. Usually several pairs of House Wrens have homes, some in old Flickers' holes, some in crevices behind the bark on the tree trunks, some in knot-holes, and this last spring a Wren box was put up in a tree at the rear of the premises of a bird-loving family, but inside the park, and promptly occupied. Several pairs of Yellow Warblers raise families, Black-headed Grosbeaks do the same, and Mountain and Green-tailed Towhees, and Kingbirds. The Arkansas Kingbird, though a common bird in the region, is but an occasional visitor in the park. Lazuli Buntings are usually about in summer and I suppose must breed, though I have not seen their nests. Bullock's Orioles hang their nests from the ends of the cottonwood boughs, and several pairs bring up families. One or two pairs of Mourning Doves usually attempt housekeeping, but I am doubtful as to their success in raising families; at least one nest I knew of was broken up.

A number of pairs of Red-shafted Flickers are always about in summer. In one case which came under my observation early in May they excavated a hole high up in a cottonwood where the wind in winter had broken off a large branch leaving a long white scar. I saw the Flickers about the place frequently and photographed them at the hole. The last of the month I discovered a pair of Red-headed Woodpeckers were in possession. I was away most of June and July, but September 10 I saw a Flicker feeding young at the hole, an unusually late date. This was in 1913. In 1914 a pair of Sparrow Hawks were in possession.

Not far from that nest in 1914, Red-headed Woodpeckers made a hole in a dead bare stub and raised young there. In May, 1915, Flickers were located

there. I was absent during June, but when I returned in July the Redheads were holding the fort once more.

One or two pairs each of Western Wood Peewees and Traill's Flycatchers appear to nest every season, as one always sees them about. There are always a few Goldfinches around, and Western Warbling Vireos.

MAGPIE

Thus we have about twenty species breeding in the park, perhaps there are more,—I know of one I have not counted, the House Sparrow; this, though common enough in town, does not seem to breed freely in the park, but in August good-sized flocks of young birds are seen around there for a few weeks and then disappear, possibly returning to the city for the winter. One might think the feeding-tables with their supplies of seed would be an attraction, but I do not think I have ever seen a House Sparrow on any of those which have come under my observation.

A few species have been observed merely as visitors which seem worthy of mention. Thus, for two springs, I have seen male Bobolinks—a rare, at least, but a local bird in Colorado; last May Bronzed Grackles were seen, not common here. Flying over the ponds I have seen four species of Swallows, Cliff, Barn, Violet-green, and Rough-winged. Plumbeous Vireos and Virginia's Warblers are occasionally noted. Audubon's Warbler is a regular visitor in migration, and has been observed as late as October 17. I have seen one Grinnell's Water-Thrush, rare in Colorado; Yellow-throats, MacGillivray's and Pileolated Warblers are not infrequently seen, and once in a while a Brown Thrasher is noted. For a species which is so common in Colorado and in the vicinity, I have curiously few records of the Mountain Bluebirds; it does not seem to frequent the park regularly, and is only occasionally observed there. Black-crowned Night Herons were seen in the spring of 1911 and 1913.

BREWER'S BLACKBIRD

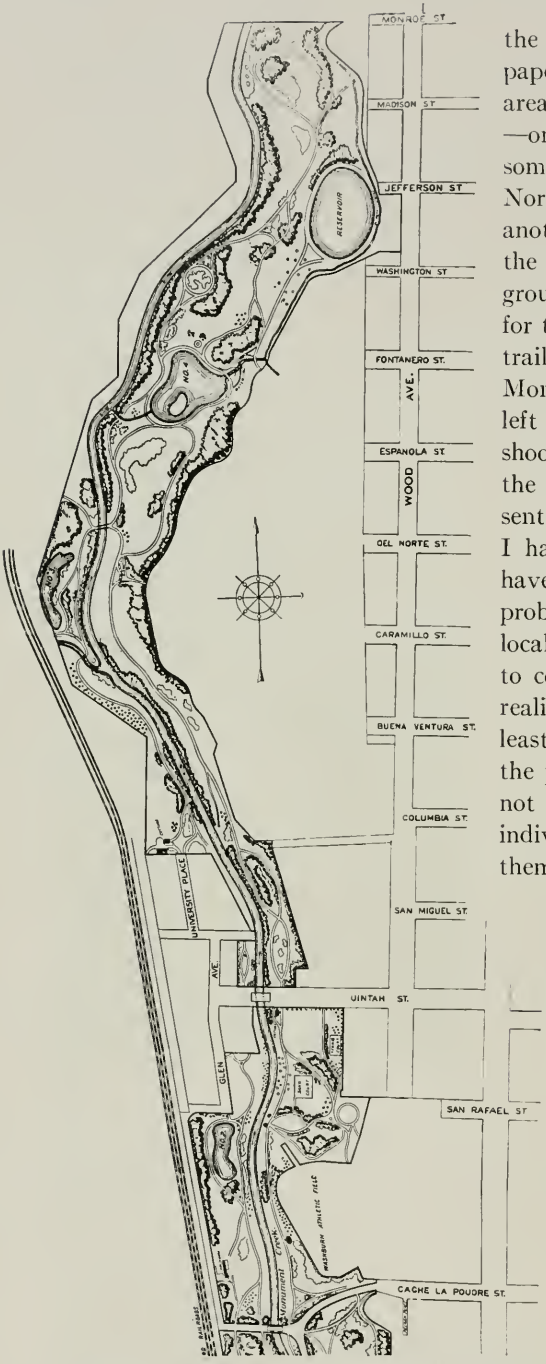
That the nesting birds are subjected to more or less disturbance in a place so much frequented by the public goes without saying, and it is a problem which is causing those interested in the birds considerable concern. First let me say that the Board of Park Commissioners take much interest in the birds and are willing to do all they can to protect them, but the funds at their disposal are somewhat limited and they cannot spare as much as they might desire for policing the park. This being the case, there is opportunity for boys to do mischief unmolested, and not only boys but grown young men; this is wilful harm. Then I have little doubt that over-curious people unintentionally disturb nesting birds by coming too close about their nests, causing their abandonment. I have reached the stage myself when I hardly dare to look at a nest if there is another person in sight whose attention might thus be called to it. A gentleman who spends much of his time in the park made a careful study of the northern end in the spring of 1915, and he estimated that up to June 1 about one-half of the young birds hatched died from one cause or another, and some of these causes, or we might say one of them, wilful destruc-

tion by human agency, is largely preventable. Education of the people, and especially of the children, will go a long way here. But what should be done about cats? There are some which frequent the park, and I know of but one way of handling the matter,—exterminating the cats.

A park such as this offers great opportunities to the people for the study of nature, at least in the case of birds, and these are likely to be taken better advantage of as time passes by. Then also, one must not neglect the economic side of the question, the great good which the birds must do in the destruction of harmful insects, and also of weed seeds. It is not unlikely that over fifty broods of Robins are raised in the whole area each summer. Think what an enormous number of insects go to satisfy the appetites of these youngsters, as well as the young of other species! One might well say that the trees, shrubs, and flowers would be destroyed but for the birds. If one does not care for the educational or economic side of the case, there is still the esthetic, the appeal made by the beauty of the creature, either of its plumage, its song, or its actions. Surely there is no excuse for those who find nothing interesting about a bird! Yet there are some who take practically no heed of a bird unless it is one of the sorts classed as game, and therefore to be shot and killed. Let those who think the hunting and killing the whole thing ponder the words of W. H. Wright, author of 'The Grizzly Bear.' He says that after hunting grizzlies for many years in order to kill them, his interest in his opponent grew to overshadow his interest in the game; and whereas formerly he had studied the grizzly to hunt him, he now began to hunt the grizzly to study him. So too, if you take a field-glass or a camera, you will find out much more about a bird. I seldom take a walk in Monument Valley Park without my camera, and have picked up many a good picture by doing this, as well as witnessing some interesting things on the ground glass of the Graflex when trying for a picture.

MOUNTAIN CHICKADEE ON FOOD-TABLE

Caring for and protecting birds in a public park is a problem which is often, if not always, difficult of solution. Ordinances may be passed and notices posted, but offenses will be committed in spite of them, and there must be means of capturing and punishing the offenders. Colorado Springs has, besides



MAP OF THE NORTHERN PORTION OF MONUMENT VALLEY PARK, COLORADO SPRINGS, COLO.
Copied from the map in the Report of the Park Commission for 1908. The city blocks are 400 feet square, streets 100 feet wide.

the park which is the subject of this paper, others which cover considerable areas of ground in their natural state, —one northeast of the city among some low bluffs, another comprising North Cheyenne Cañon, and still another, the well-known Garden of the Gods. All these cover so much ground, and call for so much expense for the care of and building roads and trails, besides the gardening work in Monument Valley Park, that little is left for police work, so more or less shooting is done. It would seem that the only solution is to arouse public sentiment so that this will be stopped. I have no doubt other communities have the same or similar troubles, and probably the treatment will vary with local conditions, but the time has got to come when all must be brought to realize that the living creatures, at least in places like public parks, are the property of the whole people and not of any individual, and that the individual must refrain from harming them in any way whatsoever. Mr. Ridgway's experiences with his place in Illinois, as recounted in BIRD-LORE, show how little regard some people have for the property of others.

The following lines, which I understand are posted in a park at Medicine Hat, Alberta, might well be copied and placed in every park in the country:

"All should strive to guard
What all may share;
A general good
Should be a general care."

A Home in the Forest

By FLORENCE MERRIAM BAILEY

THE forest was the dense, lofty, humid coast forest extending over the west slope of the Cascade Mountains in Oregon, and the home was nearly sixty miles from the railroad at the end of the McKenzie River stage-line. Branching off from the hot dusty stage road, a disused trail crossed a narrow strip of old prairie to a deserted log-cabin with a mossy roofed piazza, standing under the protecting edge of the cool, quiet forest. For several rods from the cabin the underbrush had been cut back, so that you looked around upon the well-spaced bare trunks of tall, green-topped spruces and firs, a veritable gray brotherhood, for the lower branches had dropped off as the noble trees rose toward the sky.

Good hunting-grounds the bare boles offered the tree-trunk Creepers, and, passing through the woods one morning, I heard their characteristic small beady note, and discovered two of the fascinating little Sierra Creepers, western half-brothers of the eastern Brown Creepers. Their mottled brown-and-white backs picture their background so effectively that they would be peculiarly hard to see in the shaded forest were they motionless, but you can easily follow them as they rock up one tree trunk and fly down to another, and sometimes you are helped out by sight of a white throat, as one looks down.

As I had been wanting for years to find a Brown Creeper's nest, I watched the pair until, to my great delight, I saw one of them go down inside a crack of bark—in plain sight from the piazza of the deserted cabin. What a place to watch them! How good to be called here day by day and to sit at the feet of the gray brothers in the cool, quiet forest. And what a rare place for the birds to make their home! Bare trunks with mossy bark attractive to insects and freedom from obstructing underbrush would seem to be the principal Certhian requirements. Here the birds could not only fly back and forth from bole to bole without having to dodge underbrush, but, as they slipped from the nest, could fly low over the mossy—Hypnum—carpet, where fragrant vanilla leaves, twin flowers, the low princess pine and other trailing vines grew just high enough for a Junco to creep under, and there was an occasional clump of arching ferns, a red huckleberry, or a glossy-leafed barberry to catch a ray of sunlight. And while in the close background a few young flat-leafed cedars and round full-needled firs caught and held the light, so generally did the Creepers hunt in the circle of bare boles that it seemed worthy of note when they flew back into the sunlit greenery of the enclosing underbrushed timber.

The nest was about thirteen feet from the ground in an old Douglas spruce, the bark of which was cracked from the nest down, the entrance being a narrow slit, giving just room for the parents to creep in and out easily. The nest itself was apparently six or eight inches deep.

After discovering it, I withdrew to the piazza, several rods away, to watch; but, when the parents had gone back and forth quite freely for some time, I moved boldly up to the foot of the tree about a rod away. Shrill notes and the sound of small feet prancing about on the bark over my head made me look up. There stood Certhia, turned sideways looking down at me. I had presumed on too short an acquaintance. Berating myself for taking for granted the phlegm of even such matter-of-fact birds as Creepers, I hurriedly withdrew to another tree trunk. The apology was quickly accepted, and both parents were soon busily feeding the brood.

They went to the nest in different ways. Sometimes they would light on the trunk above the crack first, then fly down below it and rock up, slipping quickly into the slit; but more often they would light below the nest. When entirely off guard, they would light close to the entrance or drop down from above straight to the nest. Usually they waited at the entrance a moment and called as if to make sure that the youngsters were awake and ready for dinner. When an old bird went in and leaned down to feed the young, I could just see, through the window-like crack in the bark, the white of its throat and breast and corresponding white patches on little throats raised for the food. When a large-winged insect like a moth was taken down, the parent stayed in some time, as if having to prepare the unmanageable food for the young. The old birds, with sanitary care, usually waited a moment after feeding the brood and carried away ordure, so they must have had an exemplarily clean nest.

Occasionally, when one parent came the other was inside, so the second one had to wait outside. The waiting bird once stood and called at the doorway until the one inside came out, and flew off with a cheerful *I-i*. But, though the pair generally took turns, they were not obstinately set on the order of their going. One day, one of them, presumably the male, after climbing the trunk with wings shaking tremuously at his side, flew down to go in, but, being followed to the door by his mate, politely gave way for her to enter first.

A parent, on leaving the nest, once climbed on up the tree trunk, but ordinarily the birds would fly down with their low call, *it-tah*, *it-tah*, and swing with undulating flight low across the mossy carpet to another tree, with an upward curve alighting on its trunk. The two were seen one day rocking up trunks each side of the home spruce. Several times I saw them light at the bottom of a tree and rock straight up until they went out of sight among the lofty branches of the tree tops; but sometimes they were most unsystematic, working up a short distance, then flying down a bit, apparently doing just as they took the notion—but let those who know more than Creepers about the distribution of insects on tree trunks criticise! When climbing, if wanting to change their angle, they would jerk themselves sideways with a flip of the wing that suggested a shrug of the shoulders.

The large trunks were their habitual hunting grounds, but here again there were exceptions. One bird actually crept up a mossy sapling, another lit on

the under side of a branch like a Black-and-White Creeper, while a third explored a small branch like a Nuthatch. But, though they allowed themselves a certain amount of latitude in hunting methods, there were unwritten laws that no good Creeper could transgress. A Bluebird would have perched on the broken-off thumbs of branches on the tree trunks, but no adult Creeper was ever seen on one of them. The old birds generally went about their business very soberly, but I once caught them chasing each other around a tree trunk and tilting off pell-mell through the piazza of the log cabin.

One morning, when the young were still very small and the parents were feeding slowly—perhaps only four times in half an hour—I had abundant time to look around. The stillness of morning was in the timber. Blue sky showed through between the higher reaches of the lofty boles which, as I looked toward the sun, stood gray, unlit. The sun was in the tree tops. Not a breath stirred. Only here and there the shadow of a solitary trunk was projected over the ground, only here and there a sunbeam strayed through, touching up a cobweb, a clump of ferns, or a branch of evergreen in its path; another time a pair of large yellow butterflies wavered through a sunbeam. In the underbrush a pine squirrel rattled the deciduous leaves near the ground and, as it climbed, the sunny green bushes moved. A Junco flew up on the roof of the log cabin, and its family with small *tsips* and flashes of white outer tail feathers rose at my feet. A gentle voiced Western Flycatcher, apparently feeding young, called from the green undergrowth beyond, and a musical Russet-backed Thrush sang softly in the dark timber, while through the still solemn forest growing softly hazy came the sweet iterations of the Nuthatch.

A few days after the nest had been discovered, about the middle of July, the voices of the young began to be heard—shrill little piping voices almost like the shrilling of insects, that not only greeted the parents when they came but followed them insistently when they went.

By this time, without remonstrance from above, I could sit so near the tree that I heard not only the feet of the parent on the bark when it came and the scratching of its claws as it slid over the edge of the crack, but also the small flit of its wings as it flew off. And now the old birds, as if they had gleaned from all the nearer trees, quite often flew off through the piazza, disappearing around the corner of the cabin.

Three days after the first voices were heard, I noticed that they sounded louder and stronger, as if the nestlings were gaining rapidly. The parents were feeding at short intervals now. When I timed them early one morning, they came irregularly, as insects do not present themselves to be devoured on the tick of the clock. The intervals varied from one to eleven minutes. The first hour the birds came thirteen times, at 8.32, 8.36, 8.43, 8.54, 8.55, 8.57, 9, 9.01, 9.07, 9.12, 9.14, 9.17½, 9.23, 9.25, 9.35, 9.37, 9.40, and 9.44. During the next half hour, when I had withdrawn to the piazza, they came still oftener. When they had hard work finding insects, they would give a casual look over

several tree trunks in rapid succession where they had recently gleaned, and then fly off to new pastures.

In going to the nest now, they generally entered without warning; perhaps because, as the young grew older, their nerves reacted more quickly to parental stimulus and it was no longer necessary to rouse them. When a parent actually fed from outside, one day, it seemed to mark an epoch. The nestlings were certainly growing up. Owing to uneasy movements in the nest, perhaps, nesting material was now sticking out of the crack in the bark. As the days passed and the sun got farther around it fell on the nest slit, and lit up the head of the parent as it came with food.

One of the old birds, whom I took to be the father, once worked slowly up the tree next the nest, talking to himself or his little ones, as he went; and as the young grew older, a slight song was often heard, a song composed of the same high-pitched notes as the call, beginning in fact with the call note, *I-i*, and being little more than a fine rather plaintive *I-i*, *high-y*, *I-y*.

When sitting between the trees watching the nest, one day, I laid my kaki hat on the moss and leaves beside me and, after a while, glancing down, was attracted by a slight movement and, on watching closely, discovered a little long-pointed brown nose, followed by the slender brown body of a tiny shrew. It nosed under my hat brim and then explored still farther till, with a dart and a dash, it ran swiftly away. Beyond the cleared circle sometimes the swaying of a branch was followed by the titter of a chipmunk or a pine squirrel, while overhead came the call of the Red-shafted Flicker, the sweet *swee'-ah-swee-see'* of a Chestnut-backed Chickadee, or the *kimp, kimp,* of Crossbills passing over; and up on a stump top close by sometimes came a cocky little brown Winter Wren, swaying from side to side, giving his tinkling song with abandon. The day the shrew appeared, when I had moved back to sit on the edge of the piazza, a noise on the shake roof overhead made me look up just in time to see a disappearing mouse-like tail. Then came the *tchip* of a Junco and the sound of little feet alighting on the roof. Inside the deserted cabin the handsome large-eyed wood rats were thought to have found shelter, and in the peak of the attic, interesting long-eared bats were discovered hanging. Surely the mossy cabin was still befriending its little neighbors—fulfilling kindly offices as it had when itself a part of the forest.

Just as the Creeper family were getting more and more interesting, there was an enforced break in my visits. When at last I was able to return to my small friends, two weeks after my discovery of the nest, while still in the sunny prairie outside, I heard Creeper voices, and no sooner had I stepped inside the cool woods than I realized what had happened. There was no need to go back to the nest!

The air was full of tiny voices and the tree trunks, on close scrutiny, revealed little creeping forms. Instead of the solitary figure of an ascending parent, there were now often two, evidently parent and child. Attracted by a slight

sound on the bark, I saw a nestling stop, and as if bound by law and precedent to always creep up, never down, it turned its white throat back over its shoulder, to take food from a parent coming up from below. A small brother whose instincts were not so well developed turned down, Nuthatch-like, to get its insect. A third fully feathered little fellow marched up the trunk with perky self-confidence, caught and ate an insect all by itself, and then branched off onto the thumb of a broken limb in shockingly adventurous style, ignoring all Certhian traditions regarding the conservation of energy.

As the family crept around over the tree trunks, the young kept up their low pipe, so that they might easily be found by their parents. While they called shrilly from the tree trunks, the small notes of a band of Chickadees came from high in the tree tops.

This was my last sight of the little family I had watched with so much interest. It was indeed, greatly to my regret, my last visit to their home, to the quiet pillared woods with its sun-touched carpet. As I looked up and up the straight tall pillars, and thought of the noise and heat and clatter, of the sordid crookedness of the world of man outside the forest, how grateful was the penetrating coolness of the dim, sun-crossed aisles! The wind in the trees seemed the chant of the gray brotherhood standing in quietness of spirit, straight and true, with heads uplifted. Outside the woods, once more I turned to look back. In front of the gray brotherhood stood the gray log cabin, its mossy roof gently touched by the sun, while from the surrounding trees came the sweet piping voices of the fledgelings and their devoted little parents.

A Merganser Family

By MAY D. LEWIS, Watertown, N. Y.

IN THE summer of 1906, we were invited to spend July at Star Lake, in the Adirondacks. The special inducement was an old Duck and her little ones. On reaching the lake, we found the most common topic of conversation to be the doings of the old Shelldrake and her family. The first thing I heard on my arrival was some one saying, "She spent last night under my dock," and the reply, "This noon they were eating at mine." The next morning, July 3, I was looking out over the lake when Mrs. Duck came, swimming slowly around the island, followed by nine baby Ducks—the cutest bunches of down I had ever seen. She acted very much as if trying to show off her children, though when we went to the water's edge, she made off to the middle of the lake like a hydroplane. We took our boat and followed, thinking to get a picture, but never got near enough. Nearly every day the experiment was repeated, with the same result; the Ducks would dive, come up and scoot off like an express train. The variation was the arrangement in swimming, sometimes a straight line with madam at one side, sometimes in the middle, or

a V with the mother at the apex, and when they were quite small, a group, the mother in the midst with a baby or two on her back. The days passed and the Ducks grew, and still we tried in vain for that much-desired picture. We saw Tanagers, Grosbeaks and Warblers galore, Thrushes and the Pileated Woodpeckers. We found nests, the Ovenbird's, Olive-backed Thrush's and Winter Wren's. We fed the Crossbills on the ground like chickens, but we were not satisfied because we coveted a picture of the Duck family. The last day of our stay came. In the afternoon I was looking through my glasses across to the main shore and spied the Ducks entering a sort of little cove where the bank was very steep and, owing to forest fires, rather bare, with fallen tree trunks and branches close to the water's edge. As they did not come out, we thought they were taking their afternoon nap over there, and we saw a last chance for that picture. We took our camera, got into the boat and started across the lake. I rowed slowly and silently, and at last we came where we could see them. There they were fast asleep on a log by the water's edge, the mother at one end. I turned the boat to back in, and my sister got her camera ready. Holding our breath, we drew closer and closer, until the Ducks were only twelve or fifteen feet away, and then Madam Duck opened her eyes and started off the log, her brood trailing along, Indian file, behind. But we got the picture!

MERGANSER AND HER BROOD OF NINE
Photographed by May D. Lewis

A Successful Bird Exhibit

By FREDERICK GREENWOOD, Spokane, Wash.

BIRD-LORE for September–October, 1915, contained a number of interesting articles on the work of some of our eastern bird-clubs, and the holding of educational bird exhibits was mentioned as one of the most useful activities of these societies. This method of enlisting public interest in the cause of bird protection is, indeed, an effective one, and one which should be more generally adopted by our bird-clubs. There are good reasons why undertakings of this sort are not more frequently attempted. In many communities, of course, interest in bird matters is not coördinated, and no definite organization exists. But even where bird-clubs are doing active work, serious obstacles often discourage any attempt at holding an exhibit of any scope. The matter of finances must be considered, suitable quarters are difficult to secure, and frequently sufficient material seems to be lacking.

Some facts relating to an exhibit held in September at Spokane, Washington, in connection with the Spokane Interstate Fair may suggest a field of work for bird-lovers in other cities. The exhibit was inspired by the success of a similar undertaking at the Washington State Fair at North Yakima, a year ago, and was such an unqualified success in itself that it promises to be a permanent feature in future fair programs. The fair management eagerly seized on the idea of an exhibit of native wild-bird life as a new attraction, and one possessing educational value along the line of the conservation of natural resources. They agreed to finance the undertaking and provided the necessary space for the exhibit itself.

The announcement that a bird exhibit was contemplated which had no connection with the poultry department of the fair excited general interest, and the problem of sufficient material for the show was soon solved. An extensive collection of mounted birds in the museum of a local university was offered for use, and some fifty specimens were actually loaned. Local taxidermists furnished other specimens, and one of these gentlemen, hearing that there was to be a corner devoted to "bird enemies," secured and mounted a splendid specimen of the genus "alley cat" with a dead bird in its mouth, which proved to be the real attraction in this department. Among the bird enemies were also shown mounted specimens of the most destructive Hawks and Owls, a weasel, a snake, a pair of House Sparrows (with a Sparrow trap displayed as a means of combating these pests), an air gun, a 22-caliber rifle, and a small boy's "beany."

An extensive line of bird-houses was shown, some secured from dealers in bird supplies and a large number contributed by local people. All sorts of feeding devices were shown in one department, together with practical suggestions for methods of winter feeding, such as suet tied to tree branches, suet baskets, dried sunflowers, etc., while a display card with the legend "Did You

THE SPOKANE EXHIBIT

The available space was increased by the construction of light frame-work partitions six feet in height, covered with white muslin and topped by a narrow shelf.

Feed the Birds Last Winter?" hinted at individual effort. Throughout the exhibit, as much information as possible was conveyed by means of printed labels, each article being made to tell its own story so far as practicable.

A collection of nests, gathered together by individuals during the late summer and fall, was an interesting feature, and lists of birds seen in and around Spokane prepared by local bird-clubs attracted considerable attention.

Through the courtesy of a local book-dealer and of the State Traveling Library, a bird library of some fifty volumes was displayed. This proved to be a most helpful part of the exhibit, not only because the books were frequently used for reference in assisting some visitor to identify certain birds of his acquaintance, but also to answer inquiries as to "What are the best bird reference books?" The Audubon bound volumes of Educational Leaflets as well as the Society's bulletins were included in the library, together with an almost complete set of government bulletins, loaned by the local government ornithologist. Through the courtesy of the Audubon Society, also, a considerable amount of descriptive literature was distributed. The Liberty Bell Bird-Club also contributed a set of leaflets, and a number of dealers in bird supplies furnished attractive advertising leaflets for distribution. Sample copies of all the leading bird publications, secured from the publishers, were displayed.

The dealer who loaned the bulk of the bird library also furnished a set of the colored 'Perry Pictures,' as well as sample sets of the Milton Bradley Company's 'Birds for Home and School,' and numerous other varieties of cut-out birds, poster patterns, birds to color, and similar educational work for children. The three Audubon bird charts were shown, and bird photographs, the work of local amateur photographers, contributed much to the attractiveness of the exhibit.

One of the most novel features was the victrola with the set of bird records, loaned by one of the music houses. A number of splendid bird records, both of actual bird songs and of imitations of bird calls, are now offered by the Victor company. This form of 'canned music' never failed to attract attention, and deceived many into believing that some of the bird-houses were inhabited.

One-half the space alloted was thus occupied with the displays of books, pictures, and similar educational features. The remaining half was converted into a miniature woodland scene, made attractive by the bringing in of a quantity of small trees and bushes, with their autumn coloring, and by the use of a painted back curtain to give perspective. Here mounted specimens of birds were arranged in natural positions on small trees. All were labeled with their common names, the scientific names being omitted, as this was an exhibit for those who know the Bluebird as a Bluebird and not as *Sialia mexicana occidentalis*, or *Sialia sialis*. This woodland-scene was the chief attraction of the whole exhibit, and was always the center of a crowd of interested spectators, some simply curious, others eagerly picking out familiar birds and

THE SPOKANE EXHIBIT.—THE WOODLAND SCENE

carrying away with them the names of varieties that had formerly been known to them only by sight.

In connection with the exhibit, a series of competitions was opened for both children and adults in bird-houses, compositions on birds, photographs, and drawings or posters, and prizes offered consisting of bird-books and cash premiums.

The fair was open during one week. Members of local bird-clubs took turns in being in attendance at the exhibit, for the purpose of answering questions and looking after the displays, and the government ornithologist thought so highly of the undertaking that he gave his entire time to it, thus not only rendering invaluable assistance toward the success of the exhibit itself, but also getting in touch with those interested in bird matters, and acquainting the public with the purpose of his office. The amount of interest shown in the exhibit on the part of the fair patrons was gratifying. Naturally, there were many who looked in simply out of curiosity, or for the purpose of securing whatever was being 'given away,' and many were like one young girl who glanced at the sign 'Our Native Birds' over the exhibit, and was heard to remark to her escort, "Aw, come on, we don't want to see none of that feeble-minded stuff!" But there were others who came and came again, bringing their friends with them, and pronouncing the display one of the most attractive features of the fair.

Similar undertakings in connection with agricultural fairs throughout the country would certainly be equally successful, and an immense amount of good could be done in thus visualizing the question of bird protection. An exhibit will surely be undertaken in Spokane another year, and, with the experience gained in this initial experiment, many difficulties can be avoided. New ideas will suggest themselves and new features will be added, so that the next attempt must be even more successful than the last as a means of arousing public interest.

Notes on the Plumage of North American Birds

THIRTY-NINTH PAPER

By FRANK M. CHAPMAN

(See Frontispiece)

American Pipit (*Anthus rubescens*, Figs. 1, 2).—The Pipit's variations in plumage are mainly seasonal. The sexes are alike in color, and the nestling differs from the winter adult chiefly in being somewhat more streaked above and less buffy below. Birds in fresh fall plumage, that is, after the postjuvenal molt in the young and postnuptial molt in the adult, are almost as buffy below as birds in fresh spring plumage (Fig. 2), but the underparts are somewhat yellower and the upperparts are much browner and less grayish, resembling therefore Fig. 1 rather than Fig. 2. With the advance of the season the plumage fades, the underparts become paler and more sharply streaked (Fig. 1 represents winter plumage, but is too yellow below) and the upperparts are duller.

In April, the body plumage is molted (prenuptial molt) and the underparts now become pinkish buff, the upperparts grayish (Fig. 2). As with the fall plumage, this spring plumage is also much affected by fading and wear, and midsummer birds are much like midwinter birds below but are decidedly grayer above. No geographic races of the Pipit are known.

Sprague's Pipit (*Anthus spraguei*, Fig. 3).—The sexes are alike in color in this species. The nestling resembles the adult below, but the feathers of the central part of the back are conspicuously margined or ringed with white, much as in the immature Baird's Sandpiper. Late-winter and early-spring birds are paler, more worn than those of autumn. At the spring molt, which, according to American Museum specimens, takes place in April, apparently most of the body plumage is replaced by more richly colored feathers, and the bird appears in a plumage resembling the bird figured (Fig. 3). As with the American Pipit, this plumage also changes with wear and July specimens resemble those of January. There are no geographic races of Sprague's Pipit. From the eastern Pipit, the only other member of the genus *Anthus* found in North America, it differs most conspicuously in its streaked back and smaller size.

Alaskan Yellow Wagtail (*Budytes flavus alascensis*, Fig. 4).—The adult female Yellow Wagtail differs from the adult male (Fig. 4) in having the gray areas of the head darker and browner, and the back browner less brightly olive-green, but these differences are not pronounced enough to warrant field identification of the sexes by color alone. The nestling or juvenal plumage is quite unlike that of the adult. The upperparts are dark brown with a suggestion of black, the underparts buff with no hint of yellow. Black streaks border each side of the throat and meet in a crescent on the breast. The first winter plumage, which follows the juvenal, is nearly uniform grayish olive

above, whitish tinged with buffy or pale yellow below. The male has a brownish breast-patch, but this is wanting in the female. There appears to be a spring molt in which this plumage is exchanged for that of the mature bird.

Our Alaskan Yellow Wagtail is a form of the east Siberian (*B. f. leucostriatus*) bird and there is a third form (*B. f. flavus*) in Europe.

American Dipper (*Cinclus mexicanus unicolor*, Fig. 5).—The male and female Dipper are alike in color, and their winter plumage differs from their summer plumage (Fig. 5) only in having the underparts and ends of the inner wing-quills margined with whitish. The nestling Dipper is more or less buffy below, especially on the abdomen, while the crown is practically as gray as the back.

After the postjuvenal molt through which it passes into first winter plumage, it more nearly resembles the adult, but the head is grayer and the throat whiter. Representative forms of the Dipper are found in Mexico and in Costa Rica.

LOUISIANA WATER-THRUSH
Photographed by A. A. Allen, Ithaca, N. Y.

A HUMMINGBIRD FAMILY AND HOW IT WAS FED
Photographed by A. A. Allen, Ithaca, N. Y.

UNITED STATES DEPARTMENT OF AGRICULTURE

Bureau of Biological Survey

Proposed Regulations for the Protection of Migratory Birds*

Washington, D. C., May 13, 1916.

Pursuant to the provisions of the act of March 4, 1913, authorizing and directing the Department of Agriculture to adopt suitable regulations prescribing and fixing closed seasons for migratory birds (37 Stat., 847), regulations, copy of which is hereto annexed, have been prepared, are hereby made public, and are hereby proposed for adoption, after allowing a period of three months in which the same may be examined and considered. The regulations, as finally adopted, will become effective on or after August 16, 1916, whenever approved by the President.

Public hearings on the proposed regulations will be held by the Bureau of Biological Survey of this department whenever deemed necessary. Inquiries in reference thereto should be addressed to the Secretary of Agriculture.

D. F. Houston, *Secretary of Agriculture.*

REGULATIONS FOR THE PROTECTION OF MIGRATORY BIRDS

Pursuant to the provisions of the act of March 4, 1913, authorizing and directing the Department of Agriculture to adopt suitable regulations describing and fixing closed seasons for migratory birds (37 Stat., 847), having due regard to zones of temperature, breeding habits, and times and lines of migratory flight, the Department of Agriculture has prepared and hereby makes public, for examination and consideration before final adoption, the following regulations:

REGULATION 1. DEFINITIONS

For the purposes of these regulations the following shall be considered migratory game birds:

(*a*) Anatidae or waterfowl, including brant, wild ducks, geese, and swans.

(*b*) Gruidae or cranes, including little brown, sandhill, and whooping cranes.

(*c*) Rallidae or rails, including coots, gallinules, and sora and other rails.

(*d*) Limicolae or shore birds, including avocets, curlew, dowitchers, godwits, knots, oyster catchers, phalaropes, plover, sandpipers, snipe, stilts, surf birds, turnstones, willet, woodcock, and yellowlegs.

(*e*) Columbidae or pigeons, including doves and wild pigeons.

For the purposes of these regulations the following shall be considered migratory insectivorous birds:

(*f*) Bobolinks, catbirds, chickadees, cuckoos, flickers, flycatchers, grosbeaks, humming-birds, kinglets, martins, meadowlarks, nighthawks or bull bats, nuthatches, orioles, robins, shrikes, swallows, swifts, tanagers, titmice, thrushes, vireos, warblers, waxwings, whippoorwills, woodpeckers, and wrens, and all other perching birds which feed entirely or chiefly on insects.

* Unfortunately this communication did not reach Bird-Lore in time for publication in the May–June number.—Editor.

REGULATION 2. CLOSED SEASON AT NIGHT

A daily closed season on all migratory game and insectivorous birds shall extend from sunset to sunrise.

REGULATION 3. CLOSED SEASON ON INSECTIVOROUS BIRDS

A closed season on migratory insectivorous birds shall continue throughout each year, except that the closed season on reedbirds or ricebirds in New Jersey, Pennsylvania, Delaware, Maryland, the District of Columbia, Virginia, North Carolina, and South Carolina shall commence November 1 and end August 30, next following, both dates inclusive: *Provided*, That nothing in this or any other of these regulations shall be construed to prevent the issue of permits for collecting birds for scientific purposes in accordance with the laws and regulations in force in the respective States and Territories and the District of Columbia.

REGULATION 4. CLOSED SEASON ON CERTAIN GAME BIRDS

A closed season shall continue until September 1, 1918, on the following migratory game birds: Band-tailed pigeons, little brown, sandhill, and whooping cranes, wood ducks, swans, curlew, willet, and all shore birds except the black-breasted and golden plover, Wilson or jacksnipe, woodcock, and the greater and lesser yellowlegs.

A closed season shall also continue until September 1, 1918, on rails in California and Vermont and on woodcock in Illinois and Missouri.

REGULATION 5. ZONES

The following zones for the protection of migratory game and insectivorous birds are hereby established.

Zone No. 1, the breeding zone, comprising the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Ohio, Indiana, Illinois, Kentucky, West Virginia, Michigan, Wisconsin, Minnesota, Iowa, North Dakota, South Dakota, Nebraska, Kansas, Missouri, Colorado, Wyoming, Montana, Idaho, Utah, Nevada, Oregon, and Washington—31 states.

Zone No. 2, the wintering zone, comprising the States of Delaware, Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Arkansas, Louisiana, Texas, Oklahoma, New Mexico, Arizona, and California—17 States,—and the District of Columbia.

REGULATION 6. CONSTRUCTION

For the purpose of regulations 7 and 8 each period of time therein prescribed as a closed season shall be construed to include the first and last day thereof.

REGULATION 7. CLOSED SEASONS IN ZONE NO. 1

Waterfowl.—The closed season on waterfowl, including coots and gallinules, shall be between December 21 and September 6 next following, except as follows:

Exceptions: In Maine, New Hampshire, Vermont, New York (except Long Island), Ohio, Michigan, Indiana, Kentucky and West Virginia the closed season shall be between January 1 and September 15;

In Massachusetts, Rhode Island, Connecticut, Long Island, New Jersey, Pennsylvania, Washington, Oregon, Utah, and Nevada the closed season shall be between January 16 and September 30; and

In Illinois, Iowa, Nebraska, Kansas, and Missouri the closed season shall be between March 11 and September 15 and between November 16 and February 9.

Rails.—The closed season on sora and other rails, excluding coots and gallinules, shall be between December 1 and August 31 next following, except as follows:

Exception: In Vermont the closed season shall continue until the open season in 1918.

Shore birds.—The closed season on black-breasted and golden plover and greater and lesser yellowlegs shall be between December 1 and August 15 next following, except as follows:

Exception: In Utah the closed season shall continue until the open season in 1918.

Jacksnipe.—The closed season on jacksnipe or Wilson snipe shall be between December 16 and September 15 next following.

Woodcock.—The closed season on woodcock shall be between December 1 and September 30 next following, except as follows:

Exceptions: In Illinois and Missouri the closed season shall continue until the open season in 1918.

REGULATION 8. CLOSED SEASONS IN ZONE NO. 2

Waterfowl.—The closed season on waterfowl, including coots and gallinules, shall be between February 1 and October 14 next following, except as follows:

Exceptions: In Alabama, Arkansas, District of Columbia, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee and Virginia the closed season shall be between February 1 and October 31 next following.

Rails.—The closed season on sora and other rails, excluding coots and gallinules, shall be between December 1 and August 31 next following, except as follows:

Exceptions: In Louisiana the closed season shall be between February 1 and October 31; and

In California the closed season shall continue until the open season in 1918.

Shore birds.—The closed season on black-breasted and golden plover and greater and lesser yellowlegs shall be between December 1 and August 15 next following.

Jacksnipe.—The closed season on jacksnipe or Wilson snipe shall be between February 1 and October 31 next following.

Woodcock.—The closed season on woodcock shall be between January 1 and October 31 next following.

REGULATION 9. HEARINGS

Persons recommending changes in the regulations or desiring to submit evidence in person or by attorney as to the necessity for such changes should make application to the Secretary of Agriculture. Hearings will be arranged and due notice thereof given by publication or otherwise as may be deemed appropriate. Persons recommending changes should be prepared to show the necessity for such action and to submit evidence other than that based on reasons of personal convenience or a desire to kill game during a longer open season.

Notes from Field and Study

Mouse-Catching by Birds

The very best mouse-catcher I ever saw was a pet Crow. One can talk of the work of Owls and Hawks, but must allow to the Crow credit for a certain kind of thoroughness which should accomplish a great good wherever the short-tailed meadow mouse can thrive. Tame Ducks and Chickens also destroy mice, but let me first tell of what I have seen Crows do.

Every winter an army of Crows arrives with thawing weather. Frost and snow have beaten down the meadow grass, leaving the mouse paths underneath plainly visible and rendering easily found the conical mass of grass that forms each warm bed in which the mice live. The hungry Crows walk over nearly every likely foot of the meadows and pull to pieces nests on every side. They also pick loose bark from stumps and dead trees, pry under brush piles and roots, in fact act the part of very able terriers. Of course it is not always mice they are after. I must acknowledge, also, that I have seen only one wild Crow with a mouse in its bill, though I have seen them pulling up nests on many occasions, and once have found a mouse hiding under a piece of ice in a corn field while three Crows tried to get at him. This was a common house mouse that had been waylaid in the act of running over the snow from one shock to another.

My pet Crow, Toby, would instantly catch and kill every mouse I let out of a trap. This was apparently his greatest diversion. He also watched for rats by the hour, though never daring to descend from a safely remote perch. When a large one scurried out to the garbage, Toby would shuffle about in utmost excitement, ruffling his feathers and shaking his head, as if saying, "That one's too much for me." Perhaps, poor fellow, he foresaw his fate, for he was caught one night and partly eaten by the very rats he used to watch.

Muscovy Ducks soon acquire the habit of following the plow. I once saw four partly grown field-mice turned up in a furrow and eaten by these Ducks which happened to be in search of earth-worms at the time. On another occasion, I saw a Muscovy catch and gravely swallow a full-grown house mouse. This mouse had a record. It lived regularly in a large corn-crib under the box for shelled corn, and when disturbed dashed into the pile of ears and escaped.

Traps failed to catch this wily little fellow and, though he lost half a tail, he lived there nearly a year and met his death only through a Duck. I tried the experiment of blocking his road to the corn by propping a broad board across the crib and running out a piece of tin at the edges. As soon as I was ready, I called the Chickens and the Ducks which were used to being fed there, and then lifted the big box. There was a moment of suspense, and then out from a cosy nest sprang the short-tailed mouse and into the board he dashed. Rather than climb over he rushed along it, and before he knew what had happened was dropped out of the crib by the slippery shoot of tin at the edge. Chickens were all around, but he dodged among them and was almost at the barn when he found the Muscovy Duck in his path and slowed up. Instantly the duck seized him, waddled a step or two with him in its bill, and then gravely swallowed everything.

Hens twice caught mice for me at the same crib, but they invariably grabbed the mouse by the tail and carried him around in that unstable fashion for a long time, the whole yard of fowls in pursuit. The mouse would get away by climbing up and pinching the Hen's neck, whereupon he would be seized by another Hen, and so on until he was tired out and easily finished by a few pecks. After that, he was always eaten with great relish.

I am afraid domestic fowls rarely have

good opportunities to catch mice, but the fact that even they take to it naturally would show that the Owl and the Hawk must find most larger birds allies in their work of keeping down the rodents' numbers.—Joseph W. Lippincott, *Bethayres, Pa.*

A Maine Pelican

This picture was taken by me, in 1899 I think, at Castine, Maine. The birds had been brought North in the spring from Florida, and released. It was a favorite sport to fish for pollock and cunners at the steamer dock, and toss the fish to the Pelicans.

MAINE PELICANS
Photographed by John B. May

I am sorry that I do not know what happened to the Pelicans when winter came.—John B. May, *Waban, Mass.*

Our New Neighbors

One day last spring, I noticed a tiny brown bird carefully inspecting the cracks and crannies of an old barrel that stood at our back door.

Yes, it was Jenny Wren, her tail tilted in true Wren fashion, which always makes it easy to distinguish a Wren from other small birds.

It was plain to see that Jenny had decided we would make desirable neighbors and was looking for suitable apartments nearby.

I procured an old cigar box, cut an opening in one end about the size of a twenty-five cent piece, tacked a shingle to one side, and nailed the shingle to the kitchen wall just under the eaves and about nine feet from the ground. A small perch was placed near the opening, and Jenny's house was complete. A week perhaps elapsed when Elinor—the other member of our family—called my attention to a wee little bird darting in and out of the door-way with twigs. Sure enough, our little Jenny and Jimmy Wren had moved in, he gallantly carrying the largest

twigs, while she carried horse-hair, grass-blades and rootlets. Jimmy sang gaily from daylight till darkness. His favorite perch was the topmost peak of the lightning-rod. Soon four hungry baby Wrens hatched out of the six speckled eggs, and then work began in earnest in our gardens, the parent birds cleaning out every bug and worm, sometimes peering under the cucumber leaves for striped beetles, next taking a rag-carpet worm from the parsley or carrots, then a slug from the rosebush, or a young grasshopper, with occasionally a daddy-long-legs for variety. One morning we discovered a colony of brown larvæ devouring the sweet pea vines. Then Elinor noticed the Wrens constantly making trips from the pea vines to the Wren house with their beaks full of wriggling brown worms. By night there was not a worm to be found. One day a pair of wicked House Sparrows decided to kill the Wrens and confiscate their home. The brave little birds fought desperately, but they were not a match for their big antagonists. Jenny's tail was completely pulled out in the battle, and Jimmy so bady hurt that he disappeared for several days. Then poor little Jenny was left alone to feed them all, and perhaps carried food to Jimmy too. She never seemed to rest or eat, but constantly carried worms to the never-satisfied babies.

Something desperate had to be done, or the faithful mother would be killed and her little family left to starve. So Elinor stood guard with a broom, while I hunted the village for a boy with a rifle. While the Sparrows were being shot, Jenny continued her trips, darting in and out, and seemed to realize fully that it was being done for her protection.

Two days later Jimmy appeared with a worm, but for some time was too weak to make the flight to the box. In due time four cute little birds peeped out of the doorway, and one by one sailed out into the big world.

For a month they remained in our gardens, a happy little family, and called to me as I worked among the vegetables and flowers. But one day, alas! they all soared away to sunnier skies. Next spring there will be two homes waiting under the eaves for our little friends.

There is nothing so valuable to a gardener, for they live entirely on worms and insects, and love the companionship of man.—Mrs. Lena Waite, *Rochester, Wis.*

A Record Bird Census

For comparison with Mr. Gilbert H. Grosvenor's article in Bird-Lore for April, 1916, I append the results of a census made in 1904 on my father's place in Nottinghamshire, England.

He is a keen naturalist and has made his estates a sanctuary for birds for many years; not even the much-abused House Sparrow is molested—and there are a great number of them there at all times. There is a lake close to the house which is frequented by several species of waterfowl; on the other side of the house is a lawn on which grow several large beech trees, and again near the house are shrubberies of laurel, rhododendron, and other ornamental shrubs. The house is covered with ivy, jasmine, roses, etc., so you see there is a variety of nesting-sites for different species. He has boxes for the different birds in every suitable place, there being no less than 76 Starling boxes alone in the beech trees.

We had a naturalist friend with us on a visit. She was greatly struck by the number of birds about the house, and asked if we had any idea how many pairs were nesting in the immediate vicinity. We really had no idea, and, our curiosity being aroused, determined to take a census of the bird population on an acre with the house as a central point. This acre took in the beech trees, part of the pond with one island, a block of shrubs, and a corner of the kitchen garden. On this block were found the following birds nesting; the ones using artificial boxes I have marked with an asterisk (*).

	Pairs
*Starling	74
*Stock Dove	2
Turtle Dove	1
Wood Pigeon	1

	Pairs
*Great Tit	3
*Marsh Tit	2
*Coal Tit	1
*Blue Tit	2
Long-tailed Tit	1
*Common Wren	3
*Spotted Flycatcher	2
*Swallow	11
*Pied Wagtail	3
Garden Warbler	1
Black-cap Warbler	1
Chiffchaff	1
Willow Wren	2
Sedge Warbler	1
Whitethroat	1
Robin (two of these in boxes)	3
Hedge Accentor	1
Goldcrest	1
Song Thrush	9
Blackbird	2
Missel Thrush	1
Green Finch	3
Chaffinch	1
Pheasant	1
Pintail	3
Tufted Duck	2
Mallard	2
Water-Hen	5
Coot	1
House Sparrow. We did not count but guessed	25

This census comprised 34 species with a total number of 153 pairs of birds nesting on an acre of land and water.—J. R. Whitaker, D. C. M., *Grand Lake, N. F.*

Evening Grosbeak at Portland, Maine

The first record of the Evening Grosbeak at Portland, Maine, was made early in February, when a large flock settled in a mountain-ash on private grounds in the western part of the city. Throughout the months of February and April, flocks in varying numbers were observed in different sections of the city, and the birds remained until the eleventh of May, none being seen, so far as known, after that date.

The writer saw these interesting visitors on four occasions, both in low pine trees and on the ground. The males were in beautiful plumage, and it was a rare treat to see them, one's pleasure being greatly enhanced by their fearlessness, as they would permit a close approach without taking flight.—Sara Chandler Eastman, *Portland, Maine.*

Evening Grosbeak at Lancaster, N. H.

We have had a flock of at least twenty-five Evening Grosbeaks with us this spring; the first were observed the last of February.

I saw them first the 22nd of March, on a grassy patch on a bushy hillside whence the snow had been blown, although there was a considerable depth except in such places. Up to the first of May they were seen in flocks of from six to twenty-five. Twice I caught them at their morning bath in a little brook which runs through an alder swamp; it was a very pretty sight. Some of them would be on the branches preening themselves while the others were bathing, with a pair of Purple Finches and a Blue Jay sitting nearby, watching the performance with much curiosity, making a scene of quite tropical color. Since the first of May I have seen and heard only one, two and three at a time, and now none for two or three days. —Martha W. Burchell, *Lancaster, N. H.*

Evening Grosbeak at Topsfield, Mass.

Several of my friends saw Evening Grosbeaks in the last of March and the early part of April. I did not see them until April 20, when I saw a male and two females. They were very tame and I stood close to them, watching them feed.—Mrs. W. H. Herrick, *Topsfield, Mass.*

Evening Grosbeak at Intervale, N. H., and Longwood, Mass.

I observed one Evening Grosbeak at Intervale, N. H., on January 29, a flock of from a dozen to two dozen at Longwood, Mass., from April 15 to 18,

and another flock of about a dozen at Intervale on May 3 and 4. A small flock is also reported, by Miss T. R. Robbins, to have been seen at Longwood on May 7.—R. E. Robbins, *Brookline, Mass.*

Evening Grosbeak at Pittsfield, Mass.

Evening Grosbeaks have spent the winter of 1915–16 at Pittsfield, Mass. The writer has talked with two persons who have seen as many as forty in a flock. One of their favorite resorts has been in the trees about a house situated on a street closely built up on both sides, through which a trolley line passes. About eight o'clock on the morning of May 3, 1916, the writer saw seven or eight in a cherry tree on the edge of the sidewalk in front of this house. Two males and three females flew down to a feeding-tray fastened to a window-sill on the second story of the house, and to an adjacent veranda roof, and fed busily without being in the least disturbed by the passing of cars and people. About noon on May 6, 1916, in Lee, ten miles south of Pittsfield, the writer saw both male and female Evening Grosbeaks, but, as they were in a deciduous wood thick with bushes and young trees, could not count them.—Lucy F. Friday, *Pittsfield, Mass.*

Evening Grosbeak at Worcester, Mass.

Evening Grosbeaks have been seen at Worcester for two months this spring. March 8, a female appeared at 53 Elm Street, feeding on hackberries, and evidently enjoying the fruit as the bird was seen daily for ten days. March 19, two females were feeding on crabapples at 19 Cedar Street, and about the same time one was seen in the southwesterly part of the city near Leicester. March 25, one male and two females were on the easterly side of the city at 37 Kendall Street, and were seen daily for about three weeks. They fed on the pods of locust and catalpa, finding seeds on the ground under linden and elm trees, and evidently found something worth eating in the dry syringa seeds. In no case, however, were they seen to take grain that had been thrown out for their benefit. By March 30 the number had increased to seven, three males and four females, and on April 13 an additional female appeared. The last report was of a pair seen in North Park, May 7.—Helen A. Ball, *Worcester, Mass.*

Evening Grosbeak at Winsted, Conn.

In the last issue of Bird-Lore I saw several letters from people who had seen the Evening Grosbeak during the past winter, but only one communication from Connecticut. Many have been seen in this part of the state. On February 24 I saw one; on March 12 and 13, two; on April 21, two; and on April 27, I saw a flock of eight.—Mrs. Mary E. Hulbert, *Winsted, Conn.*

Evening Grosbeak at Oswego, New York

On February 25 and 29, seven Evening Grosbeaks came to our red cedar and maple trees near the house. They were not at all wild, once alighting in a young cedar within thirty feet of me. This is the first time I have even seen the bird close enough for positive identification, but, after noticing its flight and hearing its warbling note sometimes given on the wing, I recall seeing similar birds at different times in years past.—D. D. Stone, *Oswego, N. Y.*

Evening Grosbeak at Troy, New York

April 16, as we were passing through an old cemetery near our home, our attention was called to a new bird-note. The sound came from the fir and spruce trees, and, when we were close enough to see the birds, we found a large flock of the Evening Grosbeak, the first we had ever seen. There must have been 20 or 25 in the flock. As we approached, they ceased calling, but were not at all timid. We stood for several minutes under a small spruce tree in which several of the birds

were sitting. Some of them wore the gray and brownish-green garb mentioned by an observer in the March-April BIRD-LORE. All had the large white patch on the wing, which shows so well when they fly. Again, on May 2, I found some of the Evening Grosbeaks in the cemetery, but the flock was much smaller.—MRS. ARTHUR F. GARDNER, *Troy, N. Y.*

The First Evening Grosbeak Record for New York City; also a Prothonotary Warbler.

In the May number of BIRD-LORE' just received, I notice in 'Notes from Field and Study' that Mr. Harold K. Decker records the occurrence of Evening Grosbeaks on Staten Island, January 9, 1916, and that Mr. Lee S. Crandall reports one from the New York Zoölogical Park, February 15, 1916. Mr. Decker believes his record to be the first definite record for Greater New York.

Miss Lelia M. Childs and myself saw an Evening Grosbeak on the morning of January 8, 1911, in Forest Park, which is in the Borough of Brooklyn, Greater New York. I reported this fact to BIRD-LORE and my letter was published April, 1911, in BIRD-LORE, Vol. XIII, p. 96, the editor adding "is the first bird of this species to be recorded from Long Island." I have since become acquainted with the Evening Grosbeak in the West, and the bird I saw in Forest Park was a female Evening Grosbeak. Therefore I can definitely record the appearance of an Evening Grosbeak in Greater New York, January 8, 1911.

I should like to report, too, the Prothonotary Warbler seen by Miss Childs and myself May 6, 1916, also in Forest Park. We watched the bird make the circuit of a small pond, feeding about the roots of the trees. It finally came onto an old log within ten feet of where we were sitting, then flew into a low bush directly in front of us and preened its feathers. It showed no fear even when we stood up and walked away.—MARY W. PECKHAM, *Brooklyn, N. Y.*

A Visit from the Horned Larks

During those dreadful days in March, 1916, when the snow fell so thick and fast that the earth was fairly smothered, we had the rare privilege of entertaining, for nearly three weeks, a flock of Horned Larks. Our home stands on the edge of the city—just where city and country meet. One morning, two or three days after our first big snow-storm, we noticed a flock of rather good-sized birds scratching and picking on the top of a pile of stable fertilizer that had been dumped, some time before, on the farther edge of our kitchen garden. At first we thought they were White-throated Sparrows, but when we examined them through a glass, saw they were not marked like any of the Sparrows. They looked so cold and hungry that I prepared them a breakfast of cracked sweet corn, rye and hominy grits. We fed them three times a day in the same place until the next big storm came. Then I swept a bare place right at the foot of the back porch steps and scattered the food there. They soon found it and came for it without the least fear. Then we discovered the little tuft of black erectile feathers on each side of the crown, and these helped us to identify the birds. When my stock of food gave out, I bought canary-bird seed and Scotch oatmeal for them. Several days when it snowed hard all day, I went out every little while and swept the snow away and scattered food for them. They learned to associate the swish of the broom with something to eat, so that if I swept rugs or brushed clothes on the back porch my Larks would come calling for food. Several times I fed as many as 25 and 27. The Larks were good diggers, using their bills only. They never hopped, but walked or ran on the snow. When frightened, they flew up, but never alighted in trees or bushes, always on the snow. They were very quarrelsome when feeding. Before they left, which was March 24, they began to sing. Their song was just a soft little warble, but very sweet and pretty, especially when a number sang together.

The morning they left there were 27 here at breakfast, and after they had eaten they gave me a rare concert, sitting on fence-posts and mounds of snow. One was on a post near the house and next to the street. When he flew up there, the post was piled high with snow, and he went though all the motions of taking a bath. Then he proceeded to make his toilet and practise his spring song, paying not the slightest attention to people and sleighs passing, nor to me when I shook my dry mop out of the window near him. That night when I scattered the seeds for supper, only one Lark came, and he did not appear again. I became very much interested in these Larks, and wish some one who knows them in their summer home would write Bird-Lore about them.—Mrs. Arthur F. Gardner, *Troy, N. Y.*

A Curious Bluebird's Nest

A few weeks ago (May 12) the caretaker of one of our local cemeteries showed me the nest of a Bluebird which is unique in my experience. As usual, the nest was placed in a cavity, but the astonishing thing was that the cavity was lying directly on the ground. In short, the birds had chosen an earthen jar used to hold flowers for the dead. This jar was lying upon its side. The nest was composed of grasses and feathers and contained four pale-blue eggs. Both birds were close by. The jar measured about five inches across the bottom, two and a half inches across the narrowed opening, and about seven inches in length. The eggs could not have been more than an inch or an inch and a half above the ground.—Manley B. Townsend, *Nashua, N. H.*

Was It the Mother Bird?

One summer day, last year, as my aunt and I were driving through a pretty country road, we nearly ran over a young Phœbe. I jumped out of our runabout in eager haste and picked it up, intending to put it over the stone wall into the meadow, out of harm's way. However, my mind turned to cats, which are always lurking about the country, and other enemies to small, helpless birds. So I decided to take the small captive home with me, and I kept it imprisoned in my hands until I reached there.

From the spot where I found the bird it was over four miles to our destination. When we arrived home, we were kept busy feeding our small guest, which was indeed a task, for the Phœbe eats only insects caught on the wing.

The next morning, as we were breakfasting, the window in the dining-room was open and we heard as usual the songs of birds, and occasionally the young Phœbe would chirp as though in answer to the call of a Robin in a nearby tree. The Phœbe was on the window-sill, with the window open and screened.

Presently we heard a whir or flutter as of wings. Upon looking up we observed on the outside of the screen a grown Phœbe hovering above the small one, and darting at it as if to reach it.

We hastened out-doors and placed a small branch in the same window (on the outside). Then we put the young Phœbe on the branch, where he clung with all his tiny might. Nearby there were some dense shrubs. The Phœbe finally became impatient and flew into these, and it was indeed a difficult task to find him. However he was soon returned to the branch.

Then the other Phœbe returned and fed the young bird insects. Presently the mate came, and together all the morning they fed the young bird, calling it from tree to tree, and from bush to bush, and coaxing it until it finally left our premises entirely and, to our knowledge, never returned.

We have always wondered whether it was the mother bird that followed the young one and fed it, or whether it was an adoption in bird life. What do Bird-Lore's readers think?—Jeannette K. Finnemore, *Chippens Hill, Bristol, Conn.*

Book News and Reviews

THEORIES OF THE ORIGIN OF BIRDS. By WILLIAM K. GREGORY. Annals of the New York Academy of Sciences, Vol. XXVII, pp. 31–38. New York. Published by the Academy, May 4, 1916.

In this paper, Dr. Gregory, starting with the demonstrated fact that birds are of reptilian origin, has summarized, from the point of view of comparative anatomy, palæòntological knowledge and inference concerning the ancestors of *Archæopteryx*, 'the oldest known fossil bird, of the Jurassic period.' He favors the hypothesis that birds were evolved from 'Pseudosuchian' reptiles of the Permian and Trias, from which also came the specialized dinosaurs, pterosaurs, etc. (reference to the work of Dr. Robert Broon). The highly specialized avian hind limbs and bipedal locomotion were acquired by terrestrial or arboreal forms before the complete specialization of the fore limbs for flight (reference to the work of Prof. H. F. Osborn and Baron Francis Nopcsa). Feathers, from specialized scales (reference to the work of Mr. W. P. Pycraft), and the power of flight arose in very active reptilian animals. High stable blood-heat, correlated with this activity, was conserved by feathers. Development of the feathers of the wing to brace against the air augmented the considerable activity of the already bird-like reptile and launched it on its initial flight as the 'first bird.'

A recent interesting paper by Mr. C. W. Beebe is spoken of, according to which 'in the young of various species of doves, pigeons, jacanas and owls there is a reduced pelvic wing,' and Dr. Gregory disposes of the hypothesis of a dual origin for birds as 'in the writer's judgment, entirely untenable.'

Dr. Gregory has taken up the problem of the evolution of the bird in connection with a Columbia University course on vertebrate development, and his paper will be especially useful to the general student because of its concisensess, conservatism and forcefulness. It gives a sound basis for investigation on avian ancestry. Many of the facts presented are not new. Probably they have never been so carefully balanced nor so successfully interpreted. One of the chief bones of contention is whether flight first evolved among bipedal, leaping, terrestrial animals or among parachuting, arboreal ones. Exponents of both theories are quoted at length, and the author, while himself favoring the hypothesis of arboreal ancestry, is not convinced that the ancestors of birds 'held the arms perfectly still throughout the gliding leap.' His bridge of hypothesis from reptile to bird inspires confidence, and should hold well until intermediate fossils are unearthed to render it no longer necessary.—J. T. N.

SOME BIRD FRIENDS. By HENRY F. PULLEN. Published by the Free Lance Publishing Company, Victoria, British Columbia, Canada. Printed and compiled at the Oak Bay Print Shop, Victoria. 30 pages. 20 illustrations from original photographs.

This attractive booklet is 'An intimate introduction to a few of the common birds of Western Canada,' and it should, as the author hopes, help its readers to an interest, or a further interest, in bird-life. Some of Mr. Pullen's 'common birds,' such as the White-crowned Sparrow and Pigeon Guillemot, are rare or but names to most easterners, and are pleasantly and interestingly introduced. It is interesting to know of a place where Crows nest several hundred pairs to the acre, and that Skylarks have been successfully acclimatized in British Columbia. A vireo is described as 'a little larger than the flycatcher,' which is, to say the least, vague, as the flycatchers of British Columbia range from under six to over nine inches in length, and of course no vireo approaches the latter size. The author has had the good fortune of watching a 'Blue Grouse' (meaning the local form of the Dusky Grouse) hoot, but the answer came doubtless not from the bird's mate but from a

rival male; we know of no female grouse that hoots or drums. Even in such non-technical writing, it would be better to be accurate in the use of terms such as 'species' and 'variety,' which are confused throughout; there are not, for instance, several species of the White-crowned Sparrow, nor is the Mountain Quail a variety of the California Quail. In the promised second booklet we would suggest the mention, at least, of the A. O. U. names of the species described. These are used in most cases in the present one, but we know only from the context that by 'Willow Grouse,' for example, the British Columbians mean their *Ruffed* Grouse. The photographs are excellent, some of them very lovely, but the method of reproduction is far from doing them justice.—C. H R

THE TRAIL OF THE INDOOR OUTER. By RAYMOND E. MANCHESTER. The Collegiate Press, George Banta Publishing Company, Menasha, Wisconsin. 1916. 47 pages.

This is not a bird-book, nor even much of a book on fishing, though its author is a nature-lover in general, and a fisherman in particular. It is merely thirty-odd pages of the rambling, idle, happy thoughts of one with the first touch of spring in his blood, sitting comfortably before a fire and indulging in memories—memories of the big fish that got away, of a morning when he watched the world, the world of lake and forest, awaken, of his own bit of a cabin, his home in the wilderness. The author is one who can count a stream, or—doubtless, though he doesn't say so much—a tree, among his intimate friends, who finds adventures in little things and upon whom is the mystery and the wonder of it all.—C. H. R.

The Ornithological Magazines

THE CONDOR.—'The Shadow-Boxing of Pipilo' is the picturesque title under which Dickey gives an account of the habit of the male Brown Towhee of fighting its reflection in a window. One striking case is given in detail in which an Anthony's Towhee at Nordhoff returned day after day and week after week. This bird renewed its attacks for three successive seasons until prevented from reaching the window by a wire screen. The article is illustrated by five half-tones including several of the best photographs ever published of the bird and its nest.

In a paper entitled 'A Populous Shore,' Mrs. F. M. Bailey recounts her experiences with the water birds, waders, and some of the smaller land birds near Venice, California, in October, 1907, and gives a graphic description of the havoc wrought in the ranks of some of the smaller waders during the hunting season.

Willard contributes a short account of 'The Nesting of the Band-tailed Pigeon in Southern Arizona,' based on notes made in the Huachua Mountains in 1915, and calls attention to the fact that in no case was more than on egg or young bird found in a nest. Wetmore publishes some observations on 'The Speed of Flight in Certain Birds,' made in November, 1914, near Tulare and Buena Vista Lakes. The observations were made from an auto on birds which were flying parallel to the road while the speed of the car was increased to a rate equal to that at which the bird was traveling. These records vary only from 22 to 28 miles per hour, although the notes relate to such widely different birds as the Blue Heron, Western Red-tailed Hawk, Flicker, Horned Lark, Raven, and Shrike.

R. H. Palmer's 'Visit to Hat and Egg Islands, Great Salt Lake, describes a trip in May, 1915, with notes on the California and Ring-billed Gulls, White Pelican, Great Blue Heron, and Caspian Tern on Hat Island, and Gulls, Herons, and Double-crested Cormorants on Egg Island. Miss Wythe's description of the 'Nesting of the Tolmie Warbler in Yosemite Valley' shows that the period of incubation in this species to be not less than twelve days, while the young leave the nest eight or nine days after hatching. H. E. Wilder contributes 'Some Distributional Notes on California Birds,' and among the short notes Bowles records the capture of two European Wigeons in Washington.

The number closes with the annual Directory of the Cooper Club.—T. S. P.

Bird-Lore

A Bi-Monthly Magazine
Devoted to the Study and Protection of Birds
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES
Edited by FRANK M. CHAPMAN
Contributing Editor, MABEL OSGOOD WRIGHT
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Bird-Lore's Motto:
A Bird in the Bush Is Worth Two in the Hand

On May 6, the Editor of Bird-Lore, accompanied by Mr. George K. Cherrie and several unofficial members of the expedition, sailed from New York to continue his field studies of South American bird-life. The first object in view was the gathering of material, photographs and data, on which to base a Habitat Group of the bird-life of the Paramo, or upper life-zone, of Mt. Chimborazo. This group is designed to be a companion of one representing the characteristic birds of the American tropics, for which specimens, etc., were secured in the Madalena Valley some years ago.

Taking into consideration the season at which the voyage was made, surprisingly few birds were seen between New York and Colon. Neither Herring Gulls nor Petrels were noted, and but two land-birds were observed. Possibly most of the Gulls had gone North, and the Petrels had not arrived from the South; while the exceptionally calm weather accounted for the absence of migrant land-birds. The first land-bird seen was a Dove (*Zenaidura macroura*) which, apparently without alighting, flew by the ship at eleven o'clock on May 8, when we were in about Lat. 31° 28′; Long. 76° 46′. The occurrence so far from the land of a bird whose migrations are not known to extend south of the Gulf States was most unexpected.

The second land-bird recorded was a Cuban Cliff Swallow (*Petrochelidon fulva*), which boarded the ship when we were between Cuba and Yucatan, a fact which is of significance in accounting for the breeding of this West Indian species in eastern Yucatan.

While waiting for the steamer to sail for Guayaquil, we visited the ruins of the old city of Panama and, aside from its historic interest, the place possesses unusual attractions for a naturalist. The rainy season had just begun, vegetation was luxuriant, and many species of birds were in song. The sandy or mangrove-lined shores, pastures, bush-grown fields and patches of forest offer wide variety of haunts, while an eminently unpicturesque posada, recently erected for the accommodation of picnicing tourists, would afford the bird-student a lodging in the very heart of what is evidently a fertile region.

During the four-day voyage from Panama to Guayaquil, a large Petrel, apparently of the genus *Æstrelata*, was common, and two species of Booby (*Sula*) were seen near La Plata Island, on which they evidently lived. This island, however, has no large colonies of birds such as inhabit the guano islands off the coast of Peru, although its barrenness makes it seemingly an ideal resort for sea-fowl.

Guayaquil was reached May 20, and our camp was made on the flanks of Chimborazo at an altitude of 11,840 feet. From this point the mountain was ascended to the upper limit of vegetation, at approximately 14,000 feet. Beyond this height only the Condor ranged and we watched these majestic birds sweeping below or soaring high above with only admiration for the ease and grace with which they navigated the thin air, but with no ambition to reach, in our laborious way, the altitude they attained with so little apparent effort.

Our experiences on Chimborazo were of absorbing interest, but cannot be recounted here, and we can add only that the studies necessary for the proposed group were satisfactorily made, and reserve for some future occasion a description of the work itself.—Quito, June 5, 1916.

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the Editor, 67 Oriole Avenue, Providence, R. I.

"What is most striking in the Maine wilderness is the continuousness of the forest. Except the burnt lands, the narrow intervals on the rivers, the bare tops of the high mountains, and the lakes and streams, the forest is uninterrupted. It is even more grim and wild than you had anticipated, a damp and intricate wilderness. . . . The lakes are something you are unprepared for, they lie so exposed to the light, and the forest is diminished to a fine fringe on their edge. These are not the artificial forests of an English King. Here prevail no forest laws but those of nature. . . .

"It is a country full of evergreen trees, of silvery birches and watery maples, the ground dotted with insipid small, red berries, and strewn with moss-grown rocks—a country diversified with innumerable lakes and rapid streams, peopled with trout, salmon, shad, pickerel, and other fishes; the forest resounding at rare intervals with the note of the chickadee, the blue jay, and the woodpecker, the scream of the fish hawk and the eagle, the laugh of the loon, and the whistle of ducks along the solitary streams; at night, with the hooting of owls and howling of wolves; in summer, swarming with myriads of black flies and mosquitos more formidable than wolves to the white man. Such is the home of the moose, the bear, the caribou, the wolf, the beaver, and the Indian. —Excerpt from Thoreau's "Camping in the Maine Woods."

BIRD-STUDY IN SHAKESPEARE'S TIME

[NOTE: This article may be used by teachers in correlation with English, History and Literature.]

DURING this year of the three hundredth anniversary of Shakespeare's death, it may be of interest to bird students to recall some of Shakespeare's allusions to birds which were known to him, and also to inquire into the knowledge of birds current in his time. The half-century when he lived, 1564–1616, was notable, it will be remembered, for exploration as well as for poetry and drama, and references to birds of many climes abound in the literature of that time. Many different species of native birds were also known then. In fact, owing to the great fens and marshes, undrained or only partially reclaimed, water fowl and wading birds, now rare or entirely absent, were abundant.

Perhaps the first thing to notice with regard to the knowledge of birds current in Shakespeare's day is the credulity and superstition that characterized it. The persevering student finds throughout the references to land as well as water birds mentioned in the literature of that period an astonishing number of fanciful conceptions regarding the nature, habits and uses of birds. One author stated that certain species of birds migrated to the moon, others described birds of 'ill omen,' while not a few writers most grotesquely misinterpreted the life-history of fairly common species.

Shakespeare's knowledge of birds was probably largely acquired during his boyhood, in the well-wooded district of Warwickshire, which may account for his failure to mention some then familiar species, as, for example, the Bustard, though his omission of the Woodpecker or 'Laughing-hecco,' as it was called, is less clear. Hummingbirds were unknown to him, a matter of regret, when we reflect that the Spanish historian Gonzalo Ferdinando de Oviedo, in his notable history of America, published at Seville in 1535, had given a delightful and quite accurate description of them, and one calculated to seize the fancy of a poet who conceived the revels of fairies and spirits with such grace as Shakespeare. It is interesting to learn that Joseph Acosta, a Jesuit historian and traveler, while in Peru (1582–83), observed Hummingbirds, which were, as he naïvely says: "so small, that oftentimes I have doubted, seeing them flie, whether they were bees or butterflies; but, in truth, they are birds." From the pen of Antonio Galvano who resided in New Spain, as Mexico was then known, comes the information that Hummingbirds "live of the dew, and the juyce of flowers and roses. They die or sleepe every yeere in the moneth of October, sitting upon a little bough in a warme and close place: they revive or wake againe in the moneth of April after that the flowers be sprung, and therefore they call them the revived birds."

Equally curious are the ideas then prevalent concerning the Pelican, which, like the Flamingo, had been observed by Sir John Hawkins and other travelers. In *King Lear*, Shakespeare speaks of Regan and Goneril as 'pelican daughters,' referring to the supposed habit of the mother bird of piercing her flesh with her beak and feeding her young with her blood if other food could not be procured. In Richard II [ii, 7, 124], you will find another allusion to this same notion. Hardly less fabulous, and more significant of the credulity of people when the real life-history of a strange bird or creature is not known, is the following statement published in a treatise on animals toward the end of the last century: "Wild animals come to the pelican's nest to drink the water which the parent bird brings in a sufficient quantity to last for many days. She carries the water in her pouch, and pours it into the nest to refresh her young ones, and to teach them to swim."

Such curious misconceptions were not confined to foreign birds, for we find that the Crane, once plentiful but becoming scarce, probably as a result of being killed as game ("the crane was a customary dish at great entertainments in the reign of Henry VIII"), was supposed to carry a stone in its mouth during its migration-journey, in order to keep it quiet and to help it maintain a steady flight.

Shakespeare alludes frequently to the Cuckoo and the Owl, and the Lark, Crow, Rook, Wren, Blackbird, Starling, Sparrow, Pigeon, Cock, and other common species, are used by him in a familiar way that indicates his close observation of their habits. The 'princely eagle,' or 'royal bird,' as it was called by poets, was probably known to Shakespeare in the

rare aviaries of the time, or perhaps only by description. The Eagle was supposed to renew its youth by bathing (a notion in part suggested by the English translation of Psalm ciii:5: "Thy youth is renewed like the eagle's") and also to be the only bird able to gaze straight at the sun, having "eye-sight so cleare that in her flying she spies the smallest beast that ever runne." Shakespeare refers to this latter idea when he makes *Richard* say to his brother *Edward:*

> "Nay, if thou be that princely eagle's bird,
> Show thy descent by gazing 'gainst the sun,"

meaning to prove his royalty by such a test. In the few menageries or 'zoos' of the time, Eagles are usually mentioned. In 1598, The Tower of London Menagerie consisted of three lionesses, one lion 'of great size,' a tiger, a lynx, an old wolf, a porcupine and an Eagle. All these creatures were kept "in a remote place, fitted up for the purpose with wooden lattices, at the queen's expense." As early as 1500, however, there was in Mexico a zoölogical garden maintained by Montezuma at great expense. Here might be seen many kinds of reptiles, birds and beasts. It was said that five hundred Cocks were fed daily to the Eagles in this garden, and three hundred men were engaged in caring for the birds. In addition, there were ponds for fresh- and salt-water birds whose feathers were, at that early day, of commercial importance.

The menus provided for royal and titled personages show that a variety of birds were snared or otherwise killed for use on their tables, certain species being used exclusively by them. Plover, Curlews, Godwit, Snipe, Woodcock, Sandpipers and other wading birds were known and hunted, as well as water fowl of many kinds. The Heron was considered a "great delicacy, and stood at the head of the game course at every state banquet." But space forbids further mention of the knowledge of birds in those days when conservation was unknown and undreamed of. Shakespeare, like other poets and dramatists of that great 'golden age' of literature, loved the feathered folk so well known to him in boyhood, observed their habits from the credulous point of view of the age, regarded hunting them as legitimate, and quite likely felt that he had attained the most trustworthy account of species in remote parts of the world, when travelers reported for example that the Ostrich hatched its eggs "by the steadfast gaze of maternal affection," on the one hand, while on the other, it ate and digested hard iron to preserve its health; or, that the Emeu was a very greedy bird, "devouring everything it meets with, even to iron and burning coal."

If we compare the work of modern ornithologists with those of only one century ago, we shall see how great an advance has been made in observing correctly the activities of birds. That Shakespeare was not long since outgrown is the wonder, as one critic has said, rather than that he has so much of perennial freshness for all generations succeeding him. It is a tribute to his fidelity to Nature that this is so true of him, and we can do no

better service than by observing accurately and describing what we see correctly.

During vacation-days, it may add interest to your reading to look up the following references; but, by all means, do not stop with Shakespeare's allusions to birds. Scarcely a poet could be found blind and deaf to the beauties of nature, and, since birds in all ages seem to have made so strong an appeal to poets, it is richly worth our while to read what they have to tell us about them.

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Emma Phipson: The Animal-Lore of Shakespeare's Time.
J. Harvey Bloom: Warwickshire (Cambridge County Geographies Series).

Ostrich: See 1. Henry IV; Act iv, Scene 1, line 97.
2. Henry VI; " iv, " 10, " 30.
Anthony and Cleopatra; " iii, " 11, " 195.

Little Grebe, or Dabchick: "Like a dive-dapper peering through the wave."

Pelican: See Richard II; Act ii, Scene 1, line 124.
King Lear; " iii, " 4, " 70.
Hamlet; " iv, " 5, " 152.

Gull: meaning a nestling or unfledged bird.
See Timon of Athens; Act ii, Scene 1, line 29.

Eagle: See " " " ; " i, " 1, " 58.

Pigeon: See As You Like It; Act i, Scene 2, line 80.
" " " " ; " iii, " 3, " 62.

Hawk: See Hamlet; Act ii, Scene 2, line 396, refers to the morning being the favorite time of hawking. When the wind blew from the northwest and the sun was in the observer's eyes it was difficult to distinguish a hawk from a heron (hernshaw).

Owl: See A Midsummer Night's Dream; Act ii, Scene 3, line 6.

Throstle, Wren, Finch, Sparrow, Cuckoo: See " " " " Act iii, Scene 1, Song of Bottom.

Wild Geese: See " " " " Act iii, Scene 2, line 20.
See As You Like It; Act ii, Scene 7, line 87.

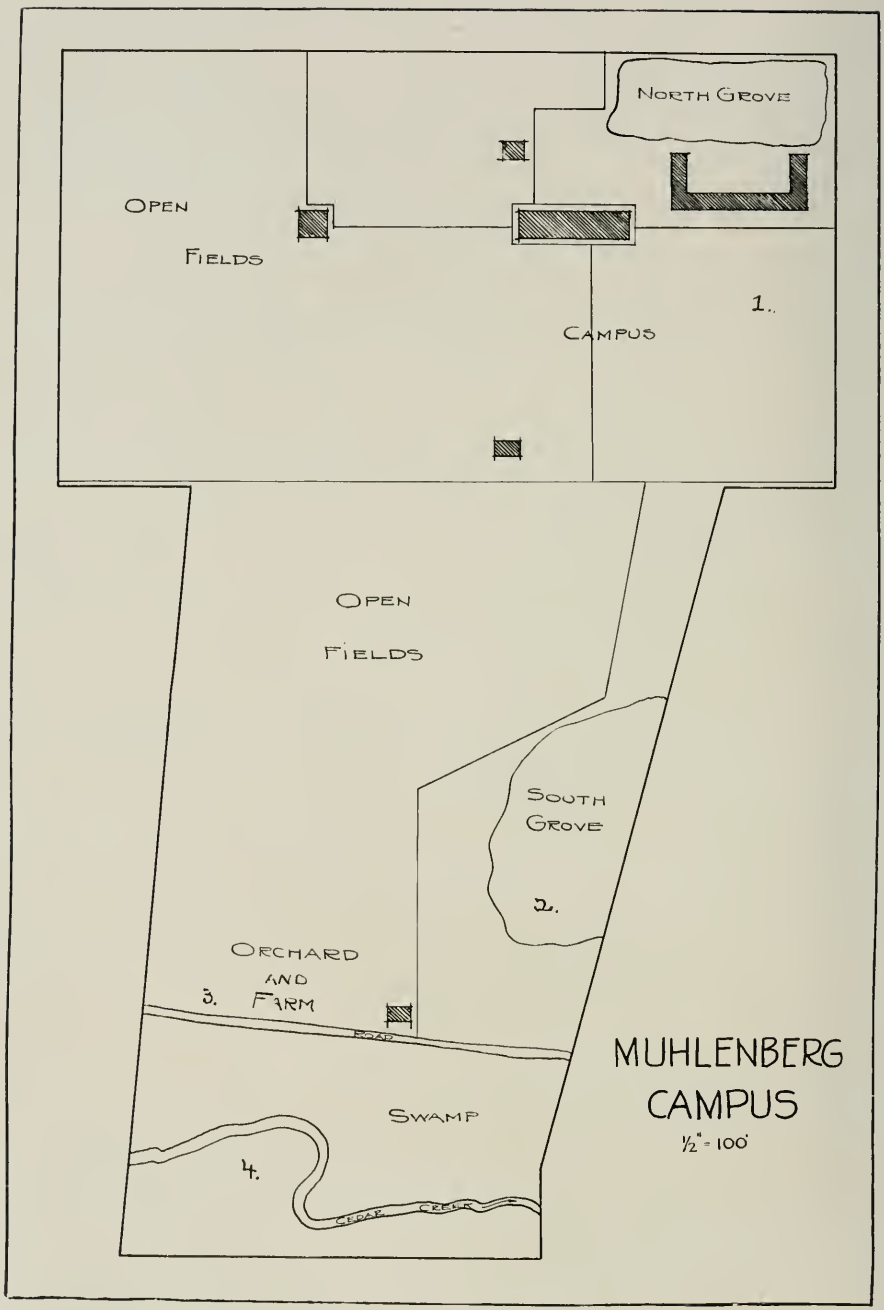
Screech-Owl: See A Midsummer Night's Dream; Act v, Scene 2, line 6.
"Hop as light as bird from brier."

Falcon: See As You Like It; Act iii, Scene 3, line 62.
"The busy day,
Waked by the lark, hath roused the ribald crows."

Starling: See Henry IV; Act. i, Scene 3, line 224.

[Note: Among the preparations for the visit of Queen Elizabeth to Kenilworth Castle were two aviaries described as follows by Robert Laneham: "Upon the first pair of posts of the bridge were set two comely wire cages, three feet long and two feet wide, and high in them live bitterns, curlews, shovelers, hernshaws (herons), godwits, such like dainty birds of the presents of Sylvanus the god of fowl."

Sir John Hawkins found an Egret in Florida (he called it an 'Egript') which was "all white as the Swanne, with legs like to an hearnshaw, and of bignesse accordingly, but it hath in her taile feathers of so fine a plume that it passeth the estridge his feather."
—A. H. W.]


NORTH GROVE
OPEN
FIELDS
1.
CAMPUS
OPEN
FIELDS
SOUTH
GROVE
2.
ORCHARD
AND
FARM
3.
ROAD
SWAMP
4.
CEDAR CREEK
MUHLENBERG
CAMPUS
½" = 100'

JUNIOR AUDUBON WORK

For Teachers and Pupils

Exercise XXVIII: Correlated with Botany and Physical Geography

[NOTE: The following suggestive method of bird-study should prove to be of practical use in any school which has grounds. In city schools, it may be applied to the study of birds in parks.—A. H. W.]

THE COLLEGE GRADUATION THESIS AS A METHOD OF BIRD-STUDY

By HENRY J. FRY

> " . . . The graduation theses are to be based upon original work. Each student is permitted to select his own subject provided it is relative to his major course, and is approved by the faculty committee. . . . "

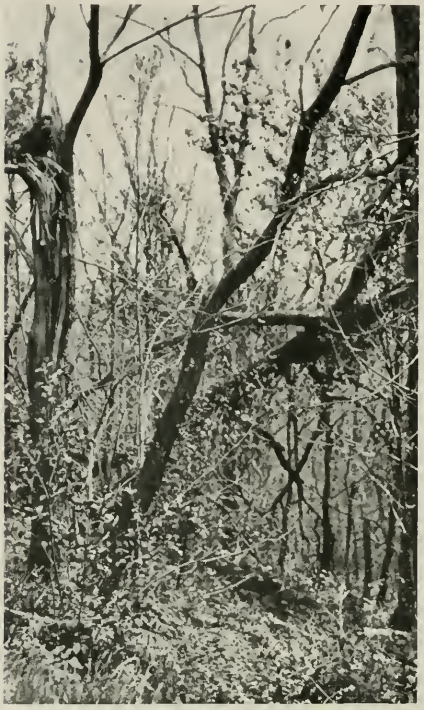
Thus are the thesis regulations read yearly to each senior class of Muhlenberg College, regulations which bear a striking resemblance to all thesis requirements in all colleges.

One student of the science department of the class of 1914 found his subject in short order without the usual racking of brains and waste of time. His decision was: 'Birds of the Muhlenberg Campus.' It was a subject that demanded 'original work,' it was 'relative to his major course,' it was speedily 'approved by the faculty committee,' not to mention the important fact that it appealed to him as a distinct pleasure, instead of repelling him as an uninteresting piece of work which had to be done.

A CORNER OF THE CAMPUS

He had long been

anxious to know more of the bird-world, and Muhlenberg's eighty-five-acre campus offered the opportunity. Gathering this kind of thesis material out-of-doors was vastly preferable to the usual library research, and every hour's preparation for such a paper gave complete and healthful relaxation. The final and lasting results of this study meant a better appreciation of the woods and fields; for an interest in bird life, if once aroused, lives on, and the acquisition is permanent.



A GLIMPSE OF SOUTH GROVE

The title was 'Birds of the Muhlenberg Campus,' not "Bird Life about Muhlenberg.' Strong emphasis was placed first of all upon studying only a *strictly limited area*, which made for definite results from the beginning. Eighty-five acres could be worked and reworked consistently and carefully, and all parts visited daily. Every moment on the grounds spent out-of-doors could be utilized for collecting data, and the brief walks between the dormitories, the administration buildings and the dining-hall, became short bird-observation walks. Working only within the confines of the campus meant concentration, and made possible accurate and valuable results; for little of importance among the birds occurred on the campus that spring which was not noted. This would have been impossible if the area studied had not been limited.

Muhlenberg's campus, like the great majority of college precincts, is well suited to bird-study. The tall oaks of North Grove, the open fields to the west, the wide smooth lawns of the campus proper interrupted by its shrubbery, the wild remnant of woodland in South Grove, the orchard and farm, and Cedar Creek with its swampy meadows all send out permanent invitations to our feathered friends.

A map of the campus was made from blue-prints, and photographs were taken of the various bird habitats there represented, and these were embodied in the finished thesis. Fig. 1 shows a corner of the campus proper, Fig. 2 is a glimpse of South Grove, Fig. 3 gives an idea of the orchard and farm, and Fig. 4 pictures the meadows of Cedar Creek. A glance at the corresponding numerals on the map will give an idea of the relative location of these bird haunts.

Having determined that only a definite area should be studied, it was then decided that the chief aim of the thesis should be to record the exact date of all bird movements and events within that area, which would then be of special value in furnishing the dates of the spring migration for that general section. Secondarily, and chiefly for the benefit of the student writing the thesis, descriptions of the plumage and song of each species were also embodied in the paper.

The study was begun February 1 and discontinued May 10. Since the writer, at the beginning of the work, was familiar with but a relatively small number of birds, it was a decided advantage to make the first observations during a winter month when birds were few in number, and then gradually to increase the number of species listed as spring brought its hosts from the South.

The average daily time spent in the field totaled two hours, as quarter- and half-hours were frequently snatched here and there in addition to the regular afternoon period of study. All notes were taken carefully and systematically, every effort being made to insure absolute accuracy. Small cards,

THE FARM AND ORCHARD

about 3 x 5 inches, were kept on hand for field use, upon which all observations were placed the moment they were made. Each evening these notes were transferred to larger sheets, 8 x 10 inches, one sheet being set apart for each species, so that the data for each species was systematized and accessible with all notations dated. These sheets were kept in a loose-leaf notebook, so that additional ones could be easily inserted where necessary.

Chapman's 'Handbook of Birds,' Reed's 'Bird Guide,' and Miss Blanchan's two books, 'Bird Neighbors' and 'Birds that Hunt and are Hunted' were consulted, but used merely as a corrective to the study, since strict care was taken not to present any fact which was not known to be true through personal experience. The advice and help of the professor of biology was also frequently sought as a further measure to avoid error.

THE MEADOWS OF CEDAR CREEK

The observations were discontinued May 10, as the thesis had to be finished by the twentieth. The material gathered on each species was then written up in an attractive style, avoiding a merely dry presentation of the notes and statistics. As an example of the method of presentation, a portion from the write-up on the Starling is here given:

"With the exception of the Crow, the Starling is the only black-colored bird to be found on the campus during the winter. It is a little smaller than the Robin, and under good light conditions its general black appearance shows touches of burnished purple with tinges of brown. The flight is graceful and frequently interspersed with smooth sailing, and this feature helps to distinguish it from the more clumsy Purple Grackle. Another characteristic is the short tail, which extends but an inch or so beyond the tips of the wings when they are folded against the sides. From the first week in February, when the study was begun, to the end of March, a group of about twenty was generally to be found among the trees near the orchard and farm. Only occasionally was it seen on the northern and more exposed parts of the campus. This group broke up during April, and the first week of May a pair was observed nesting in the North Grove. To the novice, the Starling has a most bewildering series of calls. There is a low single tone, clear whistle, as though a Quail started to whistle 'bob-white' but stopped on the end of the first note, letting it

slowly die away. There is also a plaintive 'pee-a-wee' which may be modified into a 'pee-weet' or 'pee-a,' and this is a very creditable imitation of the Wood Pewee. In addition, there is a sharp, wiry squeak, and also a varied series of rasping, gutteral splutters, which could well grace the Grackle's syrinx. Occasionally a whispered whimpering is heard, which is noticeable only at a short distance. It requires several weeks to master this vocabulary, as the Starling is rather shy and generally silent."

The completed thesis was type-written on 8 x 10 inch paper. A bookbinder made a reinforced cloth cover at the cost of fifty cents, and the rivets of this cover passed through the marginal holes in the paper, and thus the work was securely bound.

Following the title page came the map of the campus, together with three pages of mounted photographs, illustrating the different bird haunts. Preceding the thesis itself was an introduction, stating the purpose and method of the study, followed by a table of contents which listed the species discussed. The paper, approximating ten thousand words, included descriptions of thirty-five birds, taking up the winter residents first, and then the spring arrivals in the order of their appearance. At the close of the work were two tables. The first listed the various habitats from North Grove to Cedar Creek meadows, and indicated what species were generally to be found in each one. The second table was a calendar which summed up the data gathered in the briefest manner possible, and thus condensed the most valuable results attained.

This thesis has been reviewed in the hope that other college students may be led to follow a similar study. The chief gain will not be statistical data, but a greater knowledge and appreciation of bird-life and the out-of-doors, with all its attendant pleasures and compensations.

[In presenting this method of bird-study on a college campus, which resolved itself into a very creditable paper, presented as a graduation thesis, the editor of the School Department seconds the wish that other students in colleges, normal schools and high schools will appreciate the value of this kind of original investigation. Mr. Fry presents another method of bird-study in a paper on 'Seasonal Decline in Bird-Song,' which appeared in the *Auk* for January, 1916.—A. H. W.]

FOR AND FROM ADULT AND YOUNG OBSERVERS

A WREN WHO BUILT IN A WATERING-POT

In February two Wrens came hunting a home. I had a water-pot hanging in the porch. They decided to build. It was March before they built.

Their nest was deep and hollow and looked so cozy. It was made of hairs, dry grass and a soft bed of feathers. The mother laid eight eggs. While she was laying them the father brought worms and insects, so she would not have to

leave her nest. It was the 26th of March before she began to lay. The 8th of May my mother took the water-pot down, and guess what was in it? Five little birds had hatched. By the 13th of May they were completely hatched out and were so ugly. A few days after they were better looking. They were chirping all the time. By Friday, May 21, I looked at them and they were all feathered out and looked real pretty. This morning I was watching them. The father bird and the mother were feeding the babies. The father gave them his worm, then he took the mother's worm out of her mouth, too.

Sunday I looked into the water-pot and saw that one of the little ones was dead. Mother threw it out because she thought it might make the other ones sick. The mother came back and found out one was gone. She chirped and went on so funny. The little ones began to chirp, too. It seemed as if they were telling her. She then went off and called the father bird. They went off, I suppose, to hunt it.—Written by DOROTHY RICKETTS (age ten), *Danville, Kentucky.*

[This original observation, written by a fourth-grade pupil, calls to our attention the difference in nesting-dates of the same species in different latitudes. The House Wren nests in the vicinity of White Sulphur Springs, Va., April 27; D. C., May 1; Cambridge, Mass., May 25; southeastern Minnesota, May 19. The Carolina Wren, an equally abundant species in the Middle States, nests at Weaverville, N. C., April 20, although it is known to nest 'as far north as New York (southern) in March.' Bewick's Wren, or the Long-tailed House Wren, as it is sometimes called, nests in Buncombe County, N. C., April 14. In 'Birds of Indiana,' Mr. Butler says: "I have seen them (Bewick's Wrens) looking for a nest site March 25." Of the Carolina Wren he says: "I have known them to begin singing February 3, and mate at once. March 1, 1889, I found them house-hunting."

The Carolina Wren, although at times nesting about dwellings, is more generally found in thickets, fallen timber, and piles of brush, somewhat remote from the habitations of man. In southern Indiana, Bewick's Wren seems to have more or less usurped its place about buildings, while the House Wren, which is quite as domestic a species, migrates farther north and nests most abundantly probably beyond the limits of Bewick's Wren, though commonly found in the same localities with the latter. A table of nesting-data cited by Mr. Robert Ridgway for the House Wren gives a period of 47 days from the time the nest was begun, April 15, till the young left the nest, June 1. May 18 is the date given by him when the young were completely hatched. If the dates given by the writer of the above article are correct, the pair of Wrens described were longer than usual raising their first brood. Wrens seem to delight in odd nesting-sites. Gourds, tin cans, the drawbar of a freight car, a ball of twine in a binder, and even the sleeve of a coat, as Alexander Wilson relates, are among the sites selected by these elfish birds. Mrs. Mabel Osgood Wright had a pair of House Wrens nesting in a straw cuff which had been put out on the porch.

Wrens are among our most beneficial birds, and since they are easily attracted to artificial nesting-sites in localities where they are common, an effort should be made to protect them and increase their numbers. They return quite regularly to a chosen site, a fact that leads the writer to hope that the observer of the Wrens which built in a watering-pot will tell us next spring the name of the species.—A. H. W.]

A TAME RED-HEADED WOODPECKER

In the spring of 1914, while coming out from town, a boy friend found a young Red-headed Woodpecker near a large sycamore tree that had recently been blown down. It had evidently been hatched in a hole in this tree.

He brought it out to the farm, and we made a cage for it, about three feet high, and placed some dead limbs inside for it to climb on. Its favorite perch was at the very top. Food and water were kept always near, and although many kinds of food were offered, it would eat little except ripe peaches and plums.

After having been in the cage for about a week, it became very tame and answered the calls of other Woodpeckers which came to trees near the house. During its stay in the cage the red on its head developed very little, there having been a small quantity at the time it was caught.

After three or four weeks it had learned to fly and was turned loose, but in a day or two it rained and my Woodpecker seemed not to know what to do. I caught and fed it several times, and finally put it in a deserted Woodpecker's hole in the orchard.

While there, it once flew from a tree and lit on my shoulder, hesitating a little as if to make sure of my identity. I fed it here about a week, when one morning it was found in its hole almost dead and died later in the day. I supposed that its death was caused by too long sojourn in the cage or by getting the wrong kind of food.—John H. Gooch (14 years), *Albion, Ill.*

[This interesting account, which was kindly forwarded to the School Department by Mr. Robert Ridgway, is especially instructive as an example of what may be learned by original observation. The Woodpecker described was a nestling, hatched in a hole in a tree, which became tame soon after being placed in a cage. It sought a high perch, answered Woodpeckers which called near its cage, learned to fly, but after being liberated seemed unable to take care of itself and was easily caught and placed in a hole in a tree. It seemed to know its benefactor, or at least to react to the stimulus of food offered by him, but it died soon after, probably from insufficient or wrong diet and the enervating effect of being caged. The development of its plumage, so far as the red on its head was concerned, was slow. If the Woodpecker had lived longer, the observer would have discovered that immature birds of this species have little if any red in the juvenal plumage; also, that a favorite food is beechnuts, although fruit and insects are among its articles of diet during the year. For further notes of interest, see Chapman's 'Birds of Eastern North America,' p. 328.—A. H. W.]

FLYCATCHING CEDAR WAXWINGS

As I was on my way to the woods one day last summer, passing the reservoir, I saw perched on the fence surrounding the water a great many birds which I supposed to be some variety of Flycatcher that I had not yet identified. They kept darting over the water after the manner of Flycatchers. Drawing closer, I saw that they had crests, and finally identified them as Cedar Wax-

wings. Then I looked in all of my bird-books to see if they said anything about the flycatching of Cedar Waxwings, and was surprised to find that not one of them even mentioned it. Since then, whenever I have seen Cedar Waxwings I have seen them flycatching.

A Cedar Waxwing is not the only bird not a Flycatcher that I have seen catch insects in the air. I undertake to say that every bird there is has done the flycatching stunt. You may say, "Certainly not the Hummingbird;" but last summer with my very eyes I actually saw the insect that it caught. It is well known that some of the Vireos and Warblers do the stunt as well as the Red-headed Woodpecker, and I have seen a White-crowned Sparrow do the same thing.—Tom McCamant (age 13), *Portland, Oregon.*

[Mrs. Florence Merriam Bailey writes of the Cedar Waxwing, which you remember is, like the Goldfinch, a late-nesting species: "In July, when the wandering flocks are no longer seen, a walk through the neighboring orchards may show where both tardy builders have at last gone to nesting, and few bird-homes afford pictures of such human tenderness and devotion. If there is an evergreen in the vicinity, the Cedar-bird mounts guard upon its tip, but occasionally relieves the monotony of his watch by flying up in the air for light luncheons of passing insects." It may be added that, in the vicinity of fresh-water ponds, this Waxwing may not infrequently be seen during August flying out over the water from its perch in an overhanging tree to catch insects.—A. H. W.]

THE GOLDFINCH

Do not fly away from me,
Little Goldfinch in the tree!
Come down, you fine yellow bird!
And let your thrilling voice be heard.
Then you may go and hunt your flower,
The dandelion, near your bower.
Or you may upon the thistle feed,—
We're glad to have you eat its seed.

—Grant Stark (age 13), Sixth Grade, *Naperville, Illinois.*

[Those who have had the pleasure of discovering the nest of the Goldfinch, if wise enough to watch it at a discreet distance, know how charming the devotion of the male to the female is, as he feeds her while she incubates the eggs. The nest of the Goldfinch is a beautiful structure, deep and snugly lined with its favorite thistledown.—A. H. W.]

THE CARDINAL

I suppose you know the Cardinal. He is red all over, and his wife looks as though she was gray, dipped in red ink, because she is such a light color of red. A pair of Cardinals came to our house. I suppose you know that they are plucky birds.

Mr. Cardinal came on the drinking-pan that we had put out, but would not let his wife drink till he was through. If she tried when he was there, he would knock her off.

When he was through, a Robin wanted to drink, but Mrs. Cardinal would not let the Robin drink till she was through.—Katie Marino (age 10), Fourth Grade, *Mount Vernon, Iowa.*

[The writer suggests that the Cardinals must be 'plucky' birds since they monopolized the drinking-pan while visiting it, but, since many other species have a similar habit, it is more probable that each bird, much like humans, seeks its own advantage, except during the nesting-cycle when its mate and young are likely to receive especial consideration. This is a point for observers to notice with regard to different species. In fact, scarcely any action of birds is without interest and instruction for us.—A. H. W.]

THE BLUE JAY

In this latitude, a few miles from Long Island Sound, we don't feel as friendly to Blue Jays as Lowell seems to in his more northern 'garden.' Here is what he says: "Of late years the Jays have visited us only at intervals; and in their bright plumage set off by the snow, and their cheerful cry, are especially welcome"—not to us. Waking up, as they seem to, early in the morning, they come to the front soon after the Sparrows and Robins and continue in front all day long. One neighbor has a poultry-yard, which these bold birds seem to think belongs to them. They alight on the fence-poles, and, flying down among the hens, help themselves to anything to be found there.

If this were their only fault, they would be more cheerfully tolerated. But their noisy combativeness is too well known to us. They drive the other birds from the cherry trees, the mulberry and the sugar-berry trees, which we have devoted to smaller birds. They show their belligerency in other ways. A pair built a nest in an apple tree, near our back door. We had heard of their unprovoked attacks upon defenseless women, consequently felt afraid to go near the nest to get our garden flowers. A neighbor, pitying our helplessness, offered to climb the tree and move the nest to a tree further off. He said he could do it so carefully and gently they would never realize that they had been moved. I had my misgivings. He began to climb very boldly at first, but both Jays pitched on him, striking his head with their strong bills, but his thick hat protected it. He was thankful to get away with only a *scare*. Another neighbor, after being told of this, said he wasn't afraid to go up. He climbed a little way and had the same experience. Afterward they were allowed to rear their family in peace, while my roses wasted their fragrance. Perhaps these Jays enjoyed it. Who knows?

Now that their mating-season is over, they call and clamor as much as ever, without taking even a Sunday's rest. Perhaps this is only their earnest way of asking for their daily bread, like some naughty children at the breakfast table.—Emily R. Gorham, *Grove Beach, Conn.*

[The Blue Jay is hardly more pugnacious, and not so much so for its size and strength than the Kingbird, Wood Pewee or tiny Hummingbird. We must learn to understand the habits of birds and the emotions which influence the different cycles of their life throughout the year, particularly at the nesting-season. The Jay is vociferous, and like the Red-eyed Vireo may become tiresome to some observers on account of its ready voice, but the majority of bird-lovers, like Lowell, welcome the handsome dandy, and overlook what may seem at the time to be annoyances, in view of the cheery familiarity and robust activity of a species that does far more good than harm.—A. H. W.]

THE VEERY

By T. GILBERT PEARSON

The National Association of Audubon Societies
EDUCATIONAL LEAFLET NO. 87

The Thrushes are rated very high as song-birds, and each has a song so distinct in itself that, once perfectly heard, it need never be forgotten nor confused with the song of any other. One of America's most popular members of this family is the Tawny or Wilson's Thrush, usually known as the Veery. It was called Wilson's Thrush by Prince Lucien Bonaparte, who was a great admirer of Alexander Wilson, and the editor of his 'Ornithology.' The name 'Veery' is an imitation of its ringing call. To the novice in bird-study the various small Thrushes are somewhat confusing. The Veery has often been mistaken for the Wood Thrush, despite the difference that the latter has distinct rounded black spots on its breast, and the Veery has small and somewhat indistinct arrow-shaped spots on its breast and sides.

There is no mistaking the Veery's song, however. It is one of the most melodious notes of the northern woodlands, and during the spring migration is frequently heard on still days in the forests and groves of the South. It begins singing shortly after its arrival in May and usually stops early in July. There have been many attempts to describe the Veery's song, and numerous writers have tried to spell it out in words. To my mind all such attempts are woefully inadequate. Perhaps the best description of its song is that given by Ridgway, who refers to it as "an inexpressible, delicate, metallic utterance of the syllables *ta-weel-ah, twil-ah, twil-ah,* accompanied by a fine trill." The first part of the song is louder than the ending—in fact the song seems to start off with a burst of energy which diminishes before the end of the performance. To me the song has always suggested a sort of etherial trill, as if the notes came through a spiral, silvery pipe, and there is something suggesting infinite space and vast distance in their exquisite quality. Although the song carries well, it frequently happens that when one is near the performer, but does not see it, one may think the bird a considerable distance away.

The Olive-backed Thrush has a song which may be described as a poor imitation of that of the Veery, but once listen to a Veery on a long summer evening and you will never afterward mistake the Olive-backed Thrush for the Veery.

This bird knows well how to hide her nest and unless, perchance, you should see her carrying building-materials, or should discover one of the parents taking food to the young, you are not likely to learn her secret. Probably the majority of nests that are seen are found by flushing the bird from her eggs as the observer makes his way through the woodland.

VEERY

Order—PASSERES
Genus—HYLOCICHLA
Family—TURDIDÆ
Species—FUSCESCENS FUSCESCENS

National Association of Audubon Societies

On June 18, 1914, I found myself in a good Veery country along the western shore of Lake Champlain. The constant singing of these Thrushes, especially in the early morning and late afternoon and evening, awakened a strong desire to learn more of the private life of these particular birds. Just as you always feel that you know a man better after having seen his home, so do you feel on much more intimate terms with a wild bird after having looked upon the cradle it has built for its young. We were in the midst of the woods and Veeries sang on every side. So I started gaily forth to hunt a nest, but the day ended in failure, as also did the next and the next. In desperation I wrote to a very wise gentleman of my acquaintance and asked him how in the world I was to find a Veery's nest.

"It is a simple matter," he wrote, "if you will keep your eyes open. The nest is always on the ground or very near it. Look at the foot of trees or stumps, especially in growths of young sprouts, on logs or stumps, in thick places, or among plants on a steep hillside. Search only in the woods and especially where it is damp."

I read this and found that I knew just exactly as much as I did before, for I had seen all this in bird-books over and over again. So I thanked him for his kindness and went out into the woods once more. For two or three hours every day for two weeks the search went on, and not the slightest sign of a nest could I find. Yet the Veeries had nests, or had had nests, for during this time I came upon no less than fourteen young, as yet scarcely able to fly. All were perched in the bushes a few feet from the ground, and usually one or both of the parents at once discovered me.

This recalled Miss Florence Merriam's saying in her 'Birds of Village and Field,' that the Veery is a peculiarly companionable bird to those who live near its haunts. "It will become so tame," she tells us, "as to nest close to a house if not disturbed, and when sought in its natural woodland home will meet your friendly advances with confidence, answering your whistle with its own sweet wavering *whee-u*, till you feel that the woods hold gentle friends to whom you will gladly return."

The next summer found me again in these woods, prying into every thicket and clump of sprouts where a Veery might hide, and then at eight o'clock on the morning of June 19 I came upon a bird sitting on her nest. With the greatest caution I withdrew, only to go again the next day, and the day following, hoping to find her away. On the fourth trip, when I peeped into the hiding-place, I found her gone. Drawing the bushes aside, I advanced and looked into the nest. It was empty. On the ground I found three eggs. They were deep blue, unspotted, and resembled the eggs of a Catbird, but were smaller. Every one had a large section of the shell cut away and there was no sign of its contents. Surely the red squirrel I had frequently seen near by had wrought this mischief—at least, in my disappointment, I laid the blame at his door.

The nest rested among the top limbs of a little brush-pile, and was just two feet above the ground. Some young shoots had grown up through the brush and their leaves partly covered the nest from view. It had an extreme breadth of ten inches and was five inches high. In its construction two small weed-stalks and eleven slender twigs were used. The nest was made mainly of sixty-eight large leaves, besides a mass of decayed leaf-fragments. Inside this bed was the inner nest, two and a half inches wide, composed of strips of soft bark. Assembling this latter material I found that when compressed

A VEERY ON ITS NEST
Photographed by J. M. Schreck

with the hands it was about the size of a baseball. Among the decaying leaves near the base of the nest three beetles and a small snail had found a home.

The Veery, in common with a large number of other birds, builds a nest open at the top. The eggs, therefore, are often more or less exposed to the Crow, the pilfering Jay, and the egg-stealing red squirrel. This necessitates a very close and careful watch on the part of the owners. At times it may seem that the birds are not in sight, and that the eggs are deserted, but let the observer go too near and invariably one or both old birds will apprize him of their presence by voicing their resentment in loud cries of distress.

The Veery is not among the first-comers in spring, but appears in the United States from its winter home in the tropics about the first of May. The species is then scattered during the summer from Colorado to Labrador, where Audubon mentions finding it; but it is rarely seen or heard south of New York City and Lake Huron, except in the mountains, until it returns,

southward flying, in the autumn. It may be found, however, even in the prairie-country of the Northwest, as Dr. Elliott Coues has described in his 'Birds of the Colorado Valley'—a paragraph quoted because it suggests where many birds may be living, unsuspected by prairie-dwellers. Doctor Coues says:

"The heavy growth of timber that fringes the streams includes many nooks and dells, and broken ravines overgrown with thick shrubbery, from out the masses of which the tall trees tower, as if stretching forth their strong arms in kindly caressing of the humbler and weak vegetation, their offspring. In such safe retreats, where the somber shade is brightened here and there with stray beams of sunlight, in the warmth of which myriads of insects bathe their wings and flutter away their little span of life, humming a quaint refrain to the gurgle of the rivulet, the Veery meets his mate—the song rises—the woed is won—the home is made. Should we force our unwelcome presence upon the bird who is brooding her newly-found treasures with the tenderest solicitude, she will nestle closer still, in hope of our passing by, till we might almost touch her; when, without a word of remonstrance or reproach, she takes a little flight, and settles a few yards away, in silent appeal. If the time, the place, the scene, suffice not for our forbearance, with what poor words of hers may we then be moved?"

Mr. E. H. Forbush, who has studied much the food-habits of this bird, and who never permits his enthusiasm for a species to lead him away from an accurate appreciation of its economic value, has this to say:

"The Veery feeds very largely on insects. Those which frequent the ground and the lower parts of trees are commonly sought. Ants, ground-beetles, curculios, and grasshoppers are favorites. It goes to the fields sometimes at early morning, probably in search of beetles, cutworms, and earthworms. It has been seen, now and then, to eat the hairy caterpillar of the gipsy-moth. It feeds considerably in the trees, and so takes many caterpillars; but is not usually seen much in gardens or orchards, except such as are situated near woods. In summer and fall it eats wild fruit, but seldom troubles cultivated varieties. Taken all in all, it is a harmless and most useful species."

The Veery is not a very large bird even for a Thrush. Its total length from bill-tip to tail-tip is about seven and one-half inches. As a Robin is ten inches long, it will be seen that the Veery is decidedly a shorter bird than our more common dooryard friend. When the wings are spread to their greatest extent, the Veery measures about twelve inches across and the Robin sixteen inches. As the English Sparrow is six and three-tenths inches long, it would not be far wrong to say that in size the Veery is about half-way between an English Sparrow and a Robin.

The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, Secretary

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THE YEAR'S JUNIOR AUDUBON RESULTS

The fiscal year of the Junior Educational Department of the Association closed on June 1, 1916. The organization of children into bird-study classes shows, as heretofore, a satisfactory increase; the number paying fees and joining these clubs during the past year having increased about 25 per cent over the preceding twelve months.

This work had the support of $5,000 from Mrs. Russell Sage, and $20,000 from an unnamed benefactor. We were able to have a larger field-force lecturing to the schools, and organizing bird-clubs, than at any time in the past. Mrs Granville Pike represented the Association in the State of Washington; Mrs. Etta S. Wilson was our representative in Indiana; and Doctor Eugene Swope continued his endeavors in Ohio. Others in the field were Mrs. Mary Sage, Mrs. G. M. Turner, and Mr. Harold K. Decker in New York; Miss Katharine H. Stuart in Virginia and Maryland; and H. R. Pattengill in Michigan. Several of the State Audubon Societies coöperated in this work; the most active ones being those of Connecticut, Florida, Georgia, Massachusetts, New Hampshire, New Jersey, Oregon, Pennsylvania, and Rhode Island.

During the spring, there was an unusual number of bird-box-building contests entertainments both indoors and in the open, and special programs and local work of various characters that attracted the attention of the communities.

An example of the general enthusiasm among Juniors if the Euclid Club, in Washington. Last season it studied indoors 24 kinds of birds, and did much well-directed outdoor seeing and thinking. A bird-census was made, one girl showing the class 44 of the 218 occupied nests discovered. The club has its program-committee who plan songs, recitations, and talks on birds. Once, every member was to name his favorite bird, and to tell why it was his favorite; another time they were to tell an interesting fact concerning birds. The mothers are so interested that they frequently entertain the club.

There has never been a time when the Junior work claimed so much attention in the public press as during the past year. The reception which the Junior Class idea has received from educators, women's clubs, the boy scouts, and other organizations, has been a source of continued pleasure to those responsible for the work.

Scores of photographs of happy-faced

children, and hundreds of appreciative letters, reports, and samples of work have been forwarded to the New York Office. Our space will permit the reproduction of only a few sample photographs; and following the statistical statement of organizations the past year, two reports will be found printed in full. While these show striking evidences of good work being done by Junior Classes, they are no more surprising nor interesting than are numbers of others which have been received from the nine thousand nine hundred and one Junior bird-clubs formed during the year.

Statistics of Junior Classes

Southern States (Sage Fund)

Summary for year ending June 1, 1916

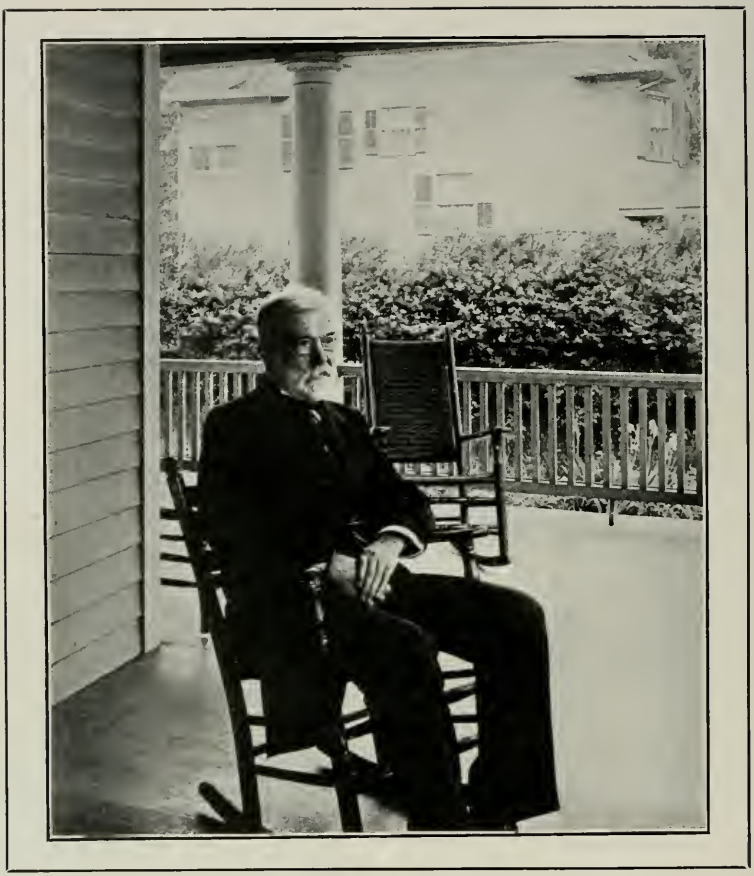
States	Classes	Members 1916	Members 1915
Alabama	24	384	410
Arkansas	12	203	266
District of Columbia	19	276	245
Florida	149	2,777	569
Georgia	98	2,293	601
Kentucky	72	1,284	1,219
Louisiana	15	340	377
Maryland	173	3,425	2,858
Mississippi	22	360	112
North Carolina	115	2,443	658
South Carolina	52	989	280
Tennessee	53	1,063	1,074
Texas	89	2,123	4,315
Virginia	88	1,517	2,186
West Virginia	162	3,455	5,478
(Foreign) Porto Rico	1	10	
Totals	1,144	22,942	20,648

Northern States
(Children's Educational Fund)

Summary for year ending June 1, 1916

States	Classes	Members 1916	Members 1915
Arizona	4	63	10
California	94	2,119	1,055
Colorado	118	2,221	792
Connecticut	472	9,137	7,606
Delaware	5	141	80
Idaho	33	619	59
Illinois	316	7,961	7,128
Indiana	280	5,677	4,695
Iowa	173	4,154	4,599
Kansas	143	3,081	1,645
Maine	61	1,162	1,239
Massachusetts	319	6,536	6,052
Michigan	694	14,334	7,324
Minnesota	379	8,094	4,304
Missouri	120	3,103	2,205
Montana	72	2,011	285
Nebraska	136	2,793	1,705
Nevada	8	180	221
New Hampshire	238	4,591	2,467
New Jersey	344	8,226	9,395
New Mexico	5	79	125
New York	1,766	35,536	28,421
North Dakota	21	477	401
Ohio	956	20,657	16,011
Oklahoma	40	711	727
Oregon	215	4,243	2,226
Pennsylvania	403	8,304	10,680
Rhode Island	55	1,280	1,621
South Dakota	54	1,131	805
Utah	69	1,521	297
Vermont	71	1,240	806
Washington	320	5,987	1,099
Wisconsin	214	4,188	2,133
Wyoming	16	290	209
(Foreign) Canada	542	10,350	3,070
" China	1	10	
Totals	8,757	182,196	131,516
Grand Totals	9,901	205,138	152,164

JUNIOR CLASS, BENEDICT AVENUE SCHOOL, NORWALK, OHIO



WILLIAM DUTCHER
On the veranda of his residence at Plainfield, New Jersey, June, 1916

THE EDUCATION OF THE SHARP-EYES

By MISS FAY A. USTICK

SOME OF THE SHARP-EYES IN COLUMBUS

The first part of this little history may prove of interest to anyone who thinks children of three and four years too young to be taught to know birds, for the nucleus of this flourishing little Audubon Society was a class of six little kindergartners; and let me say that, from the first, their interest and enthusiasm have kept pace with that of the older children.

For a number of years our study of birds was 'language work.' We studied flowers, insects, animals, and in fact all life, but the children loved the 'birdies' best. We have an advantage over city children, for we live in a very beautiful suburb where there are a great many forest trees. The birds call back and forth all day long.

Through the winter of 1914–15 we had been making birds of stiff paper. We made the wings and tails separately. After the birds were colored as naturally as possible the wings and tails were pasted on, and then the birds were suspended from a hair-like wire that was stretched across the room. A breeze would set them fluttering. They delighted the children, who worked indefatigably to make *more* birds. They would have made the same birds over and over if they had been permitted.

In that way the children became acquainted with the coloring of the Robin, Bluebird, Cardinal, Scarlet Tanager, White-throated Sparrow, Oriole, and most of the common birds. After we had made the Red-headed Woodpecker and the Nuthatch, we fastened them on the curtain in natural positions, the Nuthatch with his head pointing downward.

When spring came, it was just a step to go out into the yard and listen and watch until we knew which bird was making the whistle we heard. At the age of four, some of the children could imitate the Cardinal almost perfectly, and *loved* to do it. We were never too busy to stop work and go out into the yard if we heard a bird.

In the spring of 1915 the offer of the National Association of Audubon Societies was brought to my attention. The leaflets and buttons were sent for. They came. They were so beautiful and instructive that it seemed selfish to have them just for the kindergarten children, so I offered

to send in the names of some neighbors' children, and let them come over once a week to go birding in our yard with us. More wanted to come, so that, from a little class of six kindergartners, we have grown into a class of forty-nine members.

We were a Bird-Club at first. Now we are an Audubon Society. We are indebted to Dr. Wells W. Cooke, Mr. Henry W. Henshaw, Mr. Louis Agassiz Fuertes, Mr. Frederick H. Kennard, Miss Olive Thorne Miller, Dr. Frank Chapman, and Mr. T. Gilbert Pearson for most of our book-knowledge, then to all contributors to the Educational Leaflets that the National Audubon Association has put out, and to our Government for their pamphlets.

The children named their society the Sharp-Eyes Junior Audubon Society of Columbus, Ohio.

They keep note-books and put down the names of the birds they see and the dates. They are very conscientious about it, too, and very few will put down a bird that they are not absolutely sure of. For example, one of my boys followed a Catbird one whole morning this spring. He gave me the description of it, adding: "He made up his whistle as he went along." I told him it was a Catbird. But because it was very early for that species, the child said he would rather not put it down, because I hadn't seen it and he wasn't sure.

During the migration period we studied migration, using Mrs. Wells' article in *The National Geographic Magazine* as our basis.

Through the winter we took up the study of birds, taking the bird's physical construction first. One lesson was on his body and organs, another on his feathers. Then the wings, tail, eyes, ears, bills, legs, feet, eggs, nests, habits, and so on, were treated in turn. Now most of the children who have attended all winter know how to classify a bird. For example, if they see a bird with a short, thick bill, they know that he feeds principally upon seeds; they can tell by the length of his wing whether he spends much time on the wing or gets his living from the ground; if he has long legs, they know that he gets his living from the water; and so on.

Even now the children know which of our ordinary birds should be protected and why. They will go into the woods and fields better equipped to identify and enjoy the birds this year.

Occasionally we have a special treat by hearing an outsider talk to us. One friend brought us some very interesting nests. Among them were two beautiful ones that Marsh Wrens had made, and a very curious one that had been a Chimney Swift's home.

Most of the children fed the birds all winter. In our own yard we had three feeding-stations. 'Wild-Feather Inn'—our most expensive one—was taken possession of by the English Sparrows. One that we fitted up on a rustic table the Cardinals, Jays, and squirrels enjoyed. But the one from which we have had the most pleasure was just an old shellbark hickory. It *always* had visitors. Those that came regularly the children named. *They* were two Downy and two Hairy Woodpeckers, two Nuthatches, a Brown Creeper, a female Ruby-crowned Kinglet, and three Tufted Titmice.

Our society has outgrown its quarters. Our pastor invited us to meet at the church. As we cannot take care of more than fifty children at a time, we will limit our actual membership to fifty and have a waiting-list. Any child who is absent for three consecutive meetings forfeits his place in the society and takes his place on the waiting-list.

It may interest teachers of bird-clubs to know just how we go about our work, so I shall give a sample lesson. Subject—The Bluebird.

Each subject lasts for two weeks. The first week we talk it over, using our outline as a guide and discussing each topic separately. The second week the lesson is put on the board, and copied into note-books by the children.

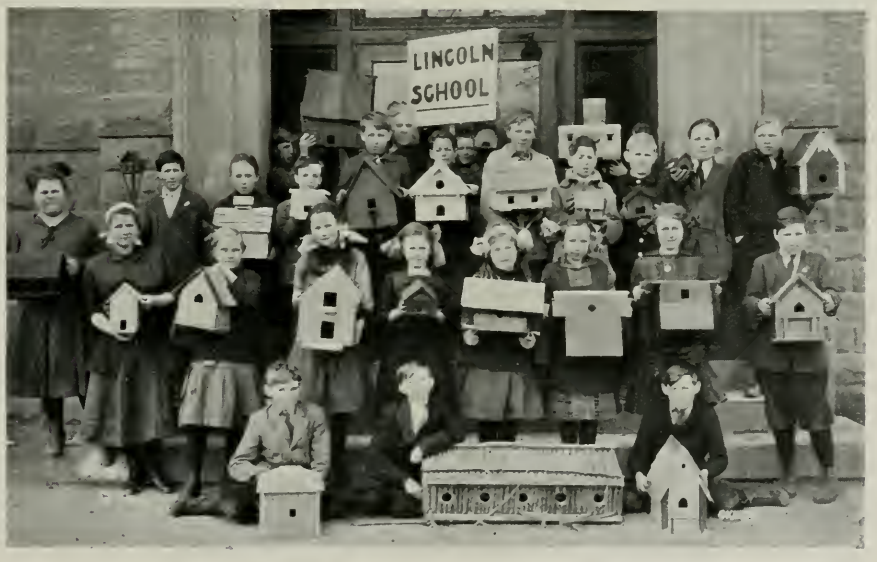
Outline for first week—facts to learn about each bird: 1. Its size and beak. 2. Wings and tail. 3. Legs and toes

JUNIOR AUDUBON CLASS, ROCK HILL, SOUTH CAROLINA

4. Color in winter and summer. 5. Song and call. 6. Enemies. 7. Nest, eggs, and nesting-habits. 8. Diet. 9. Is it helpful or a pest? 10. Migratory. If so, to what place does it go and what route does it take?

After discussing each fact, we close the lesson with Maeterlinck's 'Bluebird,' told as a story.

For the outline for the second week we had: 1. Seven inches. Beak sharp and short. 2. Average length, tail slightly forked. 3. Short, percher; three toes in front, one toward back. 4. Female duller. Blue above, russet-orange breast, getting lighter underneath. Winter same. 5. Call, a short warble. Songs: 'Dear, dear, think



JUNIOR AUDUBON CLASS, FERGUS FALLS, MINNESOTA

of it, think of it.' 'Purity, purity, purity.' 6. Usual enemies. Cat about the worst. 7. Hollow tree or bird-box. Nest rather careless of straw, grass, and feathers. Eggs from four to six. Very light blue or white. Both birds work together in building, hatching, and feeding the young. Two to three broods a season. Food, 8.76 per cent. animal, 24 per cent. vegetable: grasshoppers, fruit-pulp (mostly wild), beetles, elderberries, caterpillars, bitter sweet, etc. 9. Should be protected. 10. Slowly migratory by '6' and '7' to southern United States.

While the second outline might mean nothing at all to strangers, to the children it is simply a review, the key to which is the number that heads each subject and refers them to the first outline. They are perfectly familiar with that, having used it over and over with the different birds they have studied.

On a day when we had thirty-one children present, we found that we had thirty-seven birds' houses up and more in the process of making. That is a very small part of the houses that the people of the community are putting up.

We devote the first part of the lesson to telling what birds we have seen (and so on) through the week. If any child doesn't know what bird it is, he describes it and we help him to identify it. Most of the children have Chester Reed's 'Land Birds East of the Rockies,' and we do not lack advanced books of reference when needed.

WIDE-AWAKE IN KANSAS CITY

By ISABELLA J. CLARK

The Horace Mann Junior Audubon Society of Kansas City, Missouri, has increased its membership from eighteen to two hundred and seventy. Our class which is No. 1940, was formed in December, 1914, and has since helped to organize eight other classes. All of the members are deeply interested in the study and protection of birds.

More than two hundred bird-houses have been put up, many of which have been occupied.

Water and food are kept out at the homes of the different members. Three public feeding-stations have been maintained this year; 'Buckberry Inn' was opened for the second winter; a feeding-shelf was swung from the branch of a hickory tree; the third station was placed on the roof of the kindergarten. During our coldest weather (below zero) several members of the society carried grain and suet to the woods. The boys tramped down the snow and scattered the grain, while the suet was put in bags which the girls had crocheted, and was tied to the under side of the branches. We were rewarded by seeing a Titmouse fly to one of the trees where we had placed the food, and call excitedly to his friends. The society gave the birds a Christmas Party in the woods surrounding 'Buckberry Inn.' The trees were decorated with strings of cranberries and popcorn. Apples and suet were tied to the branches; nuts, grain, and water were placed on the feeding-shelf. The bathing and drinking pool, which Class No. 2028 built in the corner of the yard, has been kept supplied with water.

During the Christmas holidays eight members of the society went with me to Swope Park to take a bird-census. It was a clear, cold day, seventeen above zero, and the ground was covered with five inches of snow. We spent an hour in the woods and fields, counting eighty birds representing thirteen species. We then built a fire in the fireplace of the shelter-house, where we roasted 'wienies' and cheese, and discussed our tramp. We decided to spend two hours next Christmas in taking a census, just as the older members do.

Two papers, *The Bird World*, edited by Class. No. 923, and *The Horace Mann Bird Star*, edited by Class No. 1940, have done much to keep the members on the

HORACE MANN JUNIOR AUDUBON SOCIETY, KANSAS CITY, MISSOURI

alert. There has been considerable rivalry between the editors as to which would get out the paper containing the most interesting bird-news. These two classes also celebrated Bird-Day by preparing two outdoor bird-plays. The children wore costumes made of crepe paper to represent the birds whose part they were taking. These plays were to have been given in the woods, but rain forced us to give them in the schoolroom.

Our Bird Calendar proved that either the children were more alert or that the birds were more numerous this year, as a greater number of birds, representing more species, were reported this year than last. The National Audubon Association's Leaflets and the 'Bird Guide,' won by Class No. 2028, were consulted for proof of identification nearly every morning, especially during the migratory period.

A Concert for the Benefit of the Egrets

Out in Milwaukee, in the Milwaukee-Dower College, the students for the last few years have given an annual Nature Concert, on which occasion very interesting programs were rendered. A small fee was charged, and the sum thus collected was sent to the National Association of Audubon Societies for the benefit of the Egret Fund. The usual concert was given this year on June 3, 1916, and the amount realized, $11.50, was forwarded to the Secretary, accompanied by a most delightful and encouraging letter from Miss Claudia McPheeters.

ROOKERY OF HERONS, EGRETS AND IBISES, IN THE EVERGLADES NEAR PALM BEACH, FLORIDA, GUARDED BY THE NATIONAL ASSOCIATION

EXHIBIT OF THE BROOKLYN BIRD-LOVERS' CLUB

Inspired by the example of other bird-clubs, the Bird-Lovers' Club of Brooklyn decided to hold an exhibit during the Easter holidays of 1916, from April 15 to 29.

The Brooklyn Museum provided space for the exhibit and interested friends contributed toward the expenses. Much was to be done and the greatest burden fell on the president. Many letters were written, asking for material to exhibit, and in no instance was it refused. Original paintings of birds were loaned by Brasher, Fuertes, and Horsfall, and Dr. A. A. Allen loaned photographs of 'Insect Pests and Their Bird Enemies.' The Museum contributed prints of Audubon's and Wilson's pictures, and a member loaned some neat originals. Nesting-boxes, feeding-devices, cat-traps and bird-baths were loaned by the Audubon Bird-house Company of Meriden, New Hampshire, by the Greenwich Protective Society, by the Sharonware Store, and by others.

Erasmus Hall High School prepared an interesting exhibit; the Manual Training High School and the Glenwood Road Public School sent boxes made by the scholars. Two long tables were filled with bird-books by the Museum librarians. Neatly prepared charts, showing the principal migration-routes of certain birds were made. Four charts showed insect-pests and their bird enemies, and one showed enemies of birds. One chart that proved interesting had pictures of 59 species of birds seen from the back windows of a city house. These charts were procured from the New York State Educational Department. The National Association of Audubon Societies gave charts

A VIEW IN THE EXHIBIT OF THE BROOKLYN BIRD-LOVERS' CLUB

and books; and furnished its leaflets, of which 722 were sold. The Superintendent of Prospect Park prepared two charts and sent potted plants for decorative purposes; also a tree on which food-sticks, suet-holders, and other feeding-devices were placed. Close by was a Bird's Christmas Tree loaded with hempseed, suet and nuts.

The Staten Island Bird-Club sent a fine collection of birds' nests, which were placed in a case and filled with eggs from the Museum collection; and loaned a photographer's blind, as also did one of our club members.

Twenty-seven excellent water-colors of trees and shrubs on the seed and fruits of which birds feed were given by a friend.

In connection with the exhibit five illustrated lectures were given in the auditorium of the Museum. All were voluntary, and the speakers were Messrs. Herbert K. Job, Arthur A. Allen, Howard H. Cleaves, T. Gilbert Pearson, and E. Fleischer. The total attendance at these lectures was 1097, and at the exhibit 23,950. The cost approximated $140. The club feels paid for its work by the results obtained: and its thanks are extended to all who so generously contributed money, time, or materials to make the exhibit a success.—Kate P. and E. W. Vietor.

SAFETY FOR BIRDS ABOUT THE LIBERTY STATUE

The Secretary of this Association has had the pleasure of addressing, on two occasions, the Conservation Department of the General Federation of Women's Clubs during their recent biennial convention in New York City.

During the address made on Monday, June 5, 1916, attention was called to the fact that the New York *World* was raising funds for the purpose of illuminating the Statue of Liberty in New York Harbor, and that if this plan were carried through it would doubtless result in the destruction of many thousands of birds during migration, unless perches were arranged around the torch, upon which the birds could alight. In years gone by, when the torch of the statue was kept lighted, large numbers of birds annually lost their lives by dashing against the torch, or by flying about it until they became exhausted. At the close of the address the following resolution was unanimously carried:

"*Whereas*, It is a matter of common knowledge that large numbers of wild birds annually meet their death, during the periods of migration, by striking against the lanterns of lighthouses and other coastwise lights; and,

Whereas, It is now proposed to illuminate the statue of Liberty in New York Harbor, which will result in the death of innumerable birds, unless proper precaution was taken; therefore be it

Resolved, That the Conservation Department of the General Federation of Women's Clubs hereby urges the Government to place rods or perches around the statue in such a way that the migrating birds, attracted by the light, may perch thereon. Be it

Resolved, further, That a copy of this resolution be sent to the Secretary of the Department of the Interior, and to the editor of the New York *World*."

The General Federation is today doing splendid work in bird-protection under the inspiring leadership of Mrs. John D. Sherman of Estes Park, Colorado, Chairman of the Conservation Department.

A Key to a Treasury

Bird-Lore is a treasury of valuable facts, beau iful thoughts, and remarkable pictures of American birds; but it is a close-locked treasury. No one can get at any part of the wealth it holds without an impracticable waste of time and patience A key is necessary to open the vault and make its buried treasures useful. Such a key is now at hand in Ingersoll's 'Cumulative Index' to the first fifteen volumes; and its possession will transform a file of even a few volumes of the magazine into a handbook of American ornithology. It is for sale at the office of the National Association. Price 50 cents.

ENGLISH PHEASANTS BENEATH A FEEDING-STATION ON THE ESTATE OF TRACY DOWS AT TARRYTOWN, NEW YORK

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SNOWY EGRETS AT HOME
From an etching by Will Simmons

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Bird-Lore

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DEVOTED TO THE STUDY AND PROTECTION OF BIRDS
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

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Cardinals Through the Year

By MRS. ROBERT G STEELE, Melmore Ohio

FOR many years the Cardinals have been about our place, coming for food in winter and sometimes staying for part of the summer to nest. They remained throughout the year 1914, giving a good opportunity to study them at close range.

About thirty feet from the house—overlooked by the south windows of the living-rooms—is a boundary of trees, shrubbery and flowers, dividing the yard from a bit of pasture that runs back into open fields—the home of Bobolinks, Larks, and sometimes Quail.

Along this fence-row are small cherry trees, a decaying old pear tree, some small cedars, barberry bushes, upright honeysuckle, with its bright berries in midsummer, and wild roses—their seed-vessels remaining far into winter; all these, with vines and thorns, make a tangle attractive to birds.

Baths in summer and food all through the year bring many feathered visitors. No day is without its bird interest; however, that is another story with this same stage setting.

For some time before the new year, a pair of Cardinals had been about the place daily. The notebook says· "On New Year's Eve, a Screech Owl drove the male from his regular roost, in porch vines, to the window-sill, taking him down into the snow before being driven off.

"A drop of blood on his head was the only sign of injury. The following morning, five Cardinals were feeding where only two had fed before, so we believe he survived his adventure."

The pair continued to come as soon as light in the morning, for food, remaining about during the day, and, after a time, one or the other, never together, to roost in the porch vines. There was always much 'talk' over going to roost and before leaving in the morning, usually keeping up until the mate came to the feed-board.

Deep snow and severe weather brought others during the middle of the

day, ten being the highest number that winter; a brilliant company on a snow background. Some of them were familiar enough to come to the special table by the kitchen window, looking so entirely like our little mother bird, after we had felt so sure of her.

So many queries come in bird study! How did the others know there was corn in this little Egypt? Corn there was, always, and melon and pumpkin seeds. They are very fond of them and of sunflower seeds—the latter almost too tempting to Jays during the season when they so boldly call themselves what they are, thieves.

After the middle of February not so many Cardinals came, and by the middle of March only the pair remained.

If others came, they were driven away. The last week in March, the male for a number of days persistently fought his shadow reflected in the window. It was distressing, for it seemed certain he would injure himself. By this time they were cheerful neighbors, with their calls and bits of song on bright mornings.

Some warm March days they discussed nesting-places in porch vines. Their happy, low-voiced twitter, when preparing to build, is always easily recognized. The second week in April the matter evidently could not be longer delayed.

The female brought building material, working an hour or two during the middle of the day, faithfully followed by her mate, whistling and advising, but never doing any work.

The nest was a long time in building, but was never used, nor was it disturbed. The query comes, Why did they build it? They never seemed in earnest about it, rather more like children building a playhouse. May 2 she began another nest, going about it very differently, working early and late, and staying on it by the 5th.

Their nests are not fine specimens but are evidently more substantial than they look, since they have never come down in storms. Often two or three big maple leaves serve for foundation; then twigs cut from honeysuckle, and grape-vine fiber, with soft, coarse grass to furnish lining. When the little mother is on the nest, the browns all blend together and only the bright coral beak tells that she is there. They need the protective coloring, for their nest is too often not well hidden and not more than five or six feet from ground.

May 16 this second nest was disturbed sometime during the day. The eggs were on the ground, broken. On the 17th she began building again in a nearby rosebush, and during the first week in June hatched three birds.

The care-free days of the male were now ended. As soon as the eggs began to hatch, he would come to the nest. Then he would hop to one side, and together they would brood over the nest, 'talking' it over in low, earnest notes. This was usually when some eggs failed to hatch and she was staying on the nest. Was it the other eggs that troubled them?

During all this season the male brought food for the young more faithfully than his mate, hunting back and forth in the pasture grass, bringing chiefly worms. They left the nest June 13.

They were sturdy youngsters, with their pert topknots giving them a saucy look. The illustrations of the young in Mrs. Porter's 'Song of the Cardinal' are excellent. They cling well to branches, and none has ever been lost in a storm or by a prowling enemy.

When the young were a month old they got about on the ground and learned to bathe and to hunt for food, but not successfully until they were about six weeks of age. They helped themselves to bread and milk in the chicken-pan, and, at seven weeks, one managed to eat a big locust.

At the age of four weeks the males showed a decided addition of coloring, and at ten weeks the dark beak showed color at the base. They were noisy youngsters, the three often coming to the table by the window, all clamoring at once until satisfied.

After the young had been out of the nest three or four days they flew well. The old birds would call them together at dusk and lead the way into a close-headed maple across the street, where with much 'talk' they would settle for the night.

On June 24 the pair were again 'talking' of nesting, and built in the porch vines.

The male cared for the first brood, not forgetting his brooding mate, but with the second brood to care for, the first became a nuisance. When they could not be driven away, the male would resort to strategy. When followed to the nest, he rarely gave up the worm. He would sometimes fly a short distance, wait for the young to follow, then take a long sweep over the trees, returning later, alone.

As the season advanced, his song was no less joyous but much less frequent, except when his mate was building. The search for food continued with never a day, nor hour, of rest.

July 25, without spending much time helping with this second brood, or much preliminary 'talk,' the mother bird built again in the trumpet-vine.

August 6 there was trouble with some Jays, and broken eggs were on the ground. Another nest in a nearby rosebush was abandoned soon after.

August 14 she went over into the adjoining pasture and built in the lower limb of a small locust. When the male would call in distress, we knew what it meant. She seemed to understand, and sat perfectly still on her nest, allowing us to come very close to 'shoo' either a Jay or Blackbird away. Sometimes the male, fretting on a nearby tree, when danger was past would give a long, happy whistle before he returned to his 'bug'-hunting.

The first brood rarely came about, and were driven away at once when they appeared. The second set, now a month old, were noisy and hungry, the days hot and dry. Life was not all song for the Cardinals.

From this seventh nest there was just one bird, hatched about September 1. It left the nest September 11, and that same morning the male went away. He was neither seen nor heard for ten days.

The mother bird cared for this young one about the yard for four days, then called it toward the thickets along the creek.

Again a query. Why did the male desert after so faithfully caring for mate and young all the season?

His brilliant suit was worn and shabby, and no doubt he was tired. Was he afraid she would build again? Before the end of the month he was placidly taking food regularly at the same old place, his mate with him. We reasoned that, at that season of the year, a strange pair would not have come here for food.

After the middle of October, with their plumage all fine again, they were here daily, roosting nearby or in the porch vines. The Screech Owl disturbed them there, and it proved unfortunate for him.

The young birds sometimes came about, but never to stay. Early in September a young female, in the lilac near our windows, gave the whisper song discussed in Bird-Lore. It was just audible and very imperfect. She seemed to be trying it out.

And thus the Cardinals rounded out a busy year, rearing seven young. It was a delight to follow them—always in sight from the windows—a little play before a sympathetic audience.

If we are able to single out our mother bird from others of her kind, she makes it plain that she knows us from other folks. She allows no stranger to come close to the window by her table and talk to her. When she finds it bare, she goes a few feet away, waits for it to be spread, and the closing of the window is the signal for her return.

The query again. Do they often so persistently nest and rear young so late in the year?

Some other year the Cardinals may answer some of these questions for us.

'HOWELL'S' NIGHTHAWK SITTING ON ITS EGGS
Photographed by Elton Perry, Texas

Protection of Migrating Birds in England

By W. W. GRANT

A NUMBER of European ornithologists have been endeavoring to devise some scheme whereby the marked mortality of birds about lighthouses could be reduced.

The loss of great numbers of (mostly) spring migrants has been deplored for many years, and Herr J. P. Thijsse (Utrecht), one of the prime movers in this humane project, was of the opinion that many of the deaths were due to the birds becoming bewildered by the light, which would cause them to circle around the lighthouse until utterly exhausted, and then be dashed to death on the ground at the base of the light.

ST. CATHERINE'S LIGHTHOUSE, SHOWING PERCHES FOR BIRDS
Photographed by W. W. Grant

After many experiments and investigations, he came to the conclusion that, if suitable perches were supplied for the birds to rest on, many useful lives could be saved, and the perches erected at the great Brandaris Lighthouse of Terschelling, in Holland, have resulted in the saving of many thousands of birds.

He was instrumental in inducing the British Government to erect similar perches on some of their lighthouses, including St. Catherine's, on the Isle of Wight, and the Caskets, in the English Channel.

With a view to satisfying myself of the merit of such devices, I decided to spend a night at St. Catherine's light.

On account of the destruction wrought on much government property by the militant suffragettes, the Elder Brethren, who have charge of all the British lighthouses, found it necessary to issue strict orders to all lighthouse keepers to prevent all visitors from trespassing on any lighthouse property, without a written permit.

I therefore made a trip to London and called on the head Elder, whose office is at Trinity House, near the Bank of England.

I explained my mission, and although he was most courteous, yet he said I would have to make a written application and have it endorsed by a well-known ornithologist. As I had no difficulty in fulfilling his requirements, the permit arrived in a few days, and I spent the night of September 9, 1913, at the top of St. Catherine's light.

Early in the evening the conditions were most propitious, for there was a southeast wind, accompanied by considerable fog; but, unfortunately for me and to the advantage of the birds, the wind soon changed to the northeast, resulting in a clear sky, with a bright moon, so that very few birds approached the light.

At St. Catherine's, the first perches were placed on the roof, outside the reach of any of the rays of light and, as the birds could not see them, they were of little or no use.

Other perches were erected below the light, and sufficiently low to prevent their obstructing the rays of light from performing their proper function, yet high enough to receive some of the light, so that the birds could distinctly see them.

These perches are on the south and east sides of the light, as that is the direction whence the birds arrive in their spring flight.

In a report recently received from Trinity House, which is the headquarters of the British Bird Protective Association, most encouraging results have been attained at both the St. Catherine and Casket lights. The following is a quotation from the St. Catherine's keeper's letter:

"From close observations made, there is not the slightest doubt that the perches are of great value in saving the lives of the birds during the migration, and it is now a very rare occurrence to pick up any dead birds." Previously, they used to be collected by the basketful.

It would seem that we would be justified in erecting similar perches at some of the lighthouses under the control of the United States government.

FEMALE PHEASANT
Photographed by A. A. Allen

An Ancient Bird Census in Asphaltic Petroleum

By M. C. FREDERICK

AT Santa Monica, California, a fourteen-year-old pedestrian suddenly found his feet glued fast to the earth and himself slowly settling as if he had struck a powerfully magnetic quicksand. He had mistaken dust-covered crude petroleum for solid earth, but was rescued in time.

The crude or natural oil is as unlike the kerosene made from it as tar is unlike water. In many localities are seepages of this natural oil (which in time hardens into asphalt and is often called liquid asphalt) that collects in pools of greater or less extent. Thick, black, sticky dust blowing over these pools conceals their true nature, a crust forms on top by exposure to air, and they become traps for the unwary man, beast, or bird that unsuspectingly gets into their relentless grasp.

In the rainy season, water instead of dust may cover the surface, and animals attempting to wade in to drink never come out, but gradually sink till they are out of sight. Swallows skimming the surface and touching the viscous stuff are lightly held, and in the effort to extricate themselves stick at every point of contact until they are bound wing and foot and their struggles cease. A workman in the oil-fields counted seventy-five Swallows at one time sticking in the oil, which they had mistaken for water.

In the hills back of Camulos—made famous by 'Ramona'—a hen with a large brood of chickens escaped from her coop and set out to see the world. She was found on the farther side of a large tar-pool which she had nearly succeeded in crossing, her body buoyed up by her outstretched wings and her chickens trailing after her like the tail of a comet—all dead.

On large ranches where these innocent-looking but deadly springs occur, one of the daily duties in the olden times was for an employee to ride over the ranch and see that no stock had got into the 'brea,' or rescue such as had. The young and inexperienced and the old and disabled were most likely to be caught. In play or fright, when calves and colts got to running, with the heedlessness of youth, they were often trapped before they realized where their steps were leading them.

Crude petroleum left along the side of a street in Berkeley for paving purposes, was found next morning to have trapped fifty pocket gophers, which are so seldom seen that it was thought they rarely left their holes.

Just west of the city of Los Angeles is a tract of land about a quarter of a mile square in which are a number of these tar-pools varying from a few inches to several feet across, tar and gas rising from below through chimney-like openings. Oil or asphalt sometimes rises in a squirrel-hole that has tapped a vein.

The asphalt hardens on exposure to air, and many old vents have become hardened and ceased to flow; but in all these places a great scientific interest

has developed, since it has been learned that this 'death-trap of the ages' has been operating for many thousands of years, and the bones of many species of animals which no longer walk the earth are stored in its depths.

That the bones of lions, tigers, elephants, camels, horses, and other large animals of species no longer living should be found is remarkable enough, but that the far more fragile bones of smaller creatures should be preserved is almost beyond belief.

Birds of many kinds are represented (fifty or more species have been named), some huge creatures now extinct, others that have come down to the

BURROWING OWL TRAPPED IN ASPHALT

Copyright by Gilbert and Winter

present, chiefly birds of prey which collected to feed on the bodies of unfortunate animals and themselves became victims, such as Vultures, Eagles, Hawks, Owls, etc.

Sixty per cent of the species of birds represented at La Brea are still living. Of the five Eagles but two remain, the Golden and the Bald. Of six cathartine species only one remains unchanged—the California Condor, then very plentiful, now nearly extinct. There are four Owls, including the Barn Owl and the Great Horned Owl.

The Meadowlark, Woodpeckers, Quail, and Blackbirds are not wanting. Among the surprises were a Stork and a Peacock, both of varieties now extinct. There are also the Canada Goose and another species, Blue Heron, Sandhill

Crane and Raven. Falcons, now belonging to tropical America, then ranged California.

Of birds not found, Loye Holmes Miller, who has made a study of this deposit and named a dozen species never before identified, particularly notes the absence of the Mourning Dove. As this is now the commonest species in the vicinity, of the approximately eighty species of Pigeons in the Americas today, Miller concludes that it was not here at the time the tar-pools were making this most nearly complete collection of the fauna of the epoch immediately preceding man that has yet been discovered.

He also notes the absence of certain other forms one would expect to find, as the King Vulture and Harpy Eagle, both now found along the Mexican border. There are no Parrots, now common a few degrees south. The Spoonbill and Ibis are absent, now close at hand. Neither is there a trace of birds that do not fly, so the question of whether the South American Rhea entered by way of Alaska or whether it is a product of the southern continent is still unsolved. But scientists believe that some day the discovery of members of this subclass will be made, as it is believed they entered from the north, as did cats, deer, elephants, and other mammals of Old-World origin that reached us *via* the land-bridge of Alaska. There were no large carnivora in South America until the felines, or cat family, reached there in relatively late geological times.

Somewhat allied to the Condors, though without any near relatives, so

TAR-LAKE AT RANCHO LA BREA, SHOWING ASPHALTUM SEEPAGE IN FOREGROUND AND EXCAVATIONS AT RIGHT

Photographed by M. C. Frederick

far as known, either fossil or existing, is the bird Miller named Teratornis (meaning 'Terrible Bird')—a huge sailing bird larger than any existing species. A wishbone has been found that measures 7 by 4½ inches from tip to tip, and the skull is larger than that of an Ostrich. Dr. Merriam tells of a legend among a tribe of California Indians of a gigantic Vulture so large that he was able to capture the Condor and carry him up through a hole in the sky, which leads Miller to think that Teratornis may have existed after the advent of man and given rise to the legend. Indeed, some scientists think that all the bird remains recovered from La Brea represent a time after the advent of man, and that he, perhaps, assisted in their extermination. The generally larger size of the ancient birds is noted.

And so the tar-pools are unfolding their marvelous record of life in a former geological period of nobody knows how many centuries ago.

Oregon Notes

By SARAH GRACE PICKENS, La Grande, Ore.

THE Western Evening Grosbeak is generally considered a late winter bird, but it appears in our vicinity in eastern Oregon at a much earlier date. Last autumn the leaves were not yet off the trees when we saw a flock of them feeding on box-elder seeds in the center of the town. It was December 16, however, before they visited our garden, alighting on the sunflowers and chirping in their peculiarly chicken-like manner.

Juncos had been attracted to our bird-shelf attached to a long window in the kitchen, and the Redpolls also came, although they refused the canary seed scattered for them and touched only the water. After the visit of the Grosbeaks to the sunflowers, we decided to put sunflower seed out, and by the 20th the Grosbeaks came. From that time on they held undisputed possession of the shelf, the Redpolls, which also ate the sunflower seed, leaving shortly after the Grosbeaks descended upon us.

For descend upon us they did. The flock was scarcely ever less than fifteen or twenty in number, and twice great flocks of them came down, covering the trees and ground, digging the box-elder seed from the dry grass, and fighting for possession of shelf and seed-box in the tree beside the window. We estimated that there were over sixty in the flock. This, however, was unusual, the flock, as before mentioned, being generally about twenty strong. Shortly after daybreak they would come and call *cheep! cheep!* and talk sweetly among themselves. I would try hard not to listen, but I could not forget the empty shelf and the hungry birds, and I would always end by getting up and scattering the seed for them from the window, and breaking the ice from their earthen drinking-saucer, filling it with lukewarm water so that it would not freeze so rapidly.

The winter was an unusually cold and dry one, and the water froze quickly on the shelf. The birds would break the ice when it was only a skin, but even their big bills were of no avail when it grew harder, and it was necessary to change the water many times a day. The Grosbeaks seem very fond of water and when occasional snows fell they would eat mouthful after mouthful of the soft flakes, coming down immediately to drink from their saucer as if they had never tasted the snow.

The birds spent most of every day here, eating box-elder seed in the lower yard and rose hips for variety, nestling in the sheltered trees east of the house, pecking at the frozen apples still clinging to the branches, and whispering sweetly to one another, until a quarrel was started. They would leave at times, coming back with their bills red with mountain-ash berries to which the shells would stick until sometimes they appeared to be almost bearded. One frozen apple which hung on a slender twig near the window lasted all winter for the birds could reach it only by standing on tiptoe and stretching out full length. Sometimes they would overbalance, catching themselves on the wing and flying to another branch. The fresh fruit they did not seem to care for when we placed it out for them, but they were very fond of the apple seeds.

If the shelf happened to be empty when they came, they would pick up the empty shells, look inquiringly in the window, lay them down and pick up more, until we relented and replenished their larder. The sunflowers they ate first, next came the hemp, and last of all the smaller seed from the commercial bird-seed packages. They would roll the tiny seeds around in the tips of their bills, to crack them, looking comically like a fastidious person nibbling a distasteful bite, and they truly seemed insulted when only the tiny seeds were left for them. They were fond of apple-tree buds, too, and would sidle along the limbs parrot-fashion nibbling them; but the trees seemed none the worse for it in the spring.

As the shelf was six feet above the ground, we thought there was no danger of cats. But one day somebody's pet kitty cleared the six feet and clung with her front paws to the shelf, finally falling back. The cat seemed as much frightened as the birds, however, and did not try to leap to the shelf again.

The Grosbeaks seem exceedingly quarrelsome, perhaps because of the large number in so limited a space, but none of them was ever hurt, so far as I could tell. One female especially, which was larger than the rest, kept the flock in constant turmoil on the days she came but—praises be!—she did not come every day. We could tell when she arrived without seeing her, for quarrelsome notes immediately arose, continuing until she left. There might be but one bird on the shelf with her, and that at the other end, but she always charged it, holding out her wings and opening her bill in a menacing manner. The females always ended by flying from her, but the males generally drove her away. None of them could eat or drink peacefully, and finally the whole

flock would become infected with her bad temper, and they would all fight with bill and wing. I have often wondered if she ever found a mate, or if her temper softened when mating-season drew near.

The Robins which remain in the mountains all winter (they may not be our own but those nesting farther north) occasionally visit the outskirts of town, and are fond of frozen apples, too, coming to our yard to feast on them. No sooner would one begin to enjoy itself than the Grosbeaks would begin to hunger for that particular apple, and drive the poor, meek bird away. Even the little Juncos seemed prejudiced against them, and if one would try to eat barberries, which the Juncos themselves disdained, they would surround it and chase it away. However, when the Red-shafted Flickers visited us, the Grosbeaks, as well as the Juncos, attended strictly to their own affairs and kept their distance. Why, I do not know, unless they were afraid of the long, sharp bills of the Flickers, for I never saw more peaceful birds.

After the Grosbeaks had become well established on our shelf, I became possessed with the ambition really to tame them, and caught a miserable cold standing in the open window, trying to get them to eat from my hand. They would come to my hand, but never on it. After catching the cold, I hit on another plan, and, sliding open the window, which opened sideways, I scattered seed along the sill, and so lured the birds into the house to eat. Again I tried to persuade them to eat from my hand, but, although they would take the seed lying by it, they would never eat from it. Once when I was experimenting, only one bird, a male, seemed hungry, and he would hop in, take a seed from the sill by my hand, hop outside to eat it and return for another one.

One bitterly cold day, I opened the window only about six inches. One female, feeding longer than the rest, became bewildered and could not find the opening, and flew to another window where I tried to pick her up. She pecked me, so I let her go, and she flew into the dining-room and clung to a basket in another window. There my mother picked her up and held her for a minute in her hands. She sat perfectly quiet until the front door was opened, then, as the cold air struck her, she made a spring for freedom; but mother did not let her go until she reached the end of the porch. She flew from mother's hands, seemingly not so much frightened as angry, and scolded all the way to the box elders where the rest of the flock were feeding. I did not again coax the birds into the house for fear one might alight on the range.

We have short days in our mountain-encircled valley, especially in winter, when the sun drops behind the mountains a little after three. The Grosbeaks always left about sundown, probably sleeping in the sheltering pines and firs on the hills. They always returned early in the morning, however, as I well remember.

We tried to photograph the birds, but only one picture was clear enough to show what the birds were. One picture of the shelf was good, but the birds were flown before the camera was snapped.

The birds remained until the middle of May, seeming lost and out of place among the summer birds, which were courting and looking about for home-sites. As the weather grew warmer, they became quieter, sitting in the trees and talking softly. The flock became smaller and smaller; some days no birds came at all, or only a few for a short time, but every storm drove them back again. April was warm and the leaves and apple blossoms came out. Then snow fell, and one day we had the odd combination of apple blossoms and Hummingbirds, Grosbeaks and snow, in the yard.

I have read in several places that the song of the Western Grosbeak is not known. One day, as I was sitting by an open door, a Grosbeak on a branch a few feet above me, after whispering soft little phrases for several minutes, began to *sing*. It was not a full-throated song, but merely the breath of one, such as Mr. J. William Lloyd mentioned hearing a Catbird sing. It sang for some time, then flew away, only to return and begin all over again. That was the first and the last time I ever heard a Grosbeak sing.

We could always distinguish the quarrelsome female by her size and actions. Another bird used only one foot, and the feathers were gone from one side of the breast of another (the work of a cat, probably). Then there was the gourmand, which ate longer than the others, returning sometimes by himself to feast on the seed; so we are anxiously waiting to see if our same flock returns this autumn, to make pleasant the winter for us.

Winter Feeding-Stations at Highland Park, Rochester, N. Y., 1915-1916

By WM. L. G. EDSON and R. E. HORSEY, Rochester, N. Y.

HIGHLAND PARK, Rochester, N. Y., justly famous for its collection of shrubs and small trees from the whole world, which furnish an abundance of berries, dry seeds and shelter, with its large pinetum giving cover, juniper berries and cone seeds, makes an ideal place in which to observe the winter birds. At the request of the Superintendent of Parks, C. C. Laney, food-stations have been maintained, where suet and small seeds for the native birds, with corn, wheat, etc., for the introduced Pheasants and the native Ruffed Grouse, are scattered.

To show the results obtained, it was decided to watch for an entire day the Herbarium Food-Station, situated on the edge of the pinetum among several whitewood or cucumber trees (*Magnolia acuminata*) and visited by most of the birds. This food-station was originally started for the Chickadees, Woodpeckers and Nuthatches. It was supplied with a 'food-hopper' filled with sunflower seed, hung well up in a cucumber tree, a chunk of suet tied to a limb near the main trunk, a piece of suet suspended by three feet of string from a branch, and a 'food-stone.' A 'food-stone' is made by melting suet

RED-BREASTED NUTHATCH AT SUET
Photographed by W. L. G. Edson

DOWNY WOODPECKER AT SUET
Photographed by W. L. G. Edson

and adding millet, canary, hemp and sunflower seed, the cooling suet hardening and causing the seeds to cling to the 'stone.' As the Juncos started to come here after the seed spilled from the 'hopper' onto a table underneath, seeds were occasionally scattered for them.

March 5, 1916, with three feet of snow on the ground, a brisk northwest wind and a heavy snow in the early morning, clearing at 8 A. M. and fair with wind the rest of the day, temperature 20° to 23°, barometer 29.68 to 29.96, was the day taken to record all visits made.

The first bird seen was a Pheasant passing into the evergreens on the way to a 'Pheasant feeding-station,' to be quickly followed by the Chickadees at the 'food-hopper' at 6.37 A. M., and the other birds in quick succession.

JUNCO AT SUET; FOOD 'STONE ON TREE
Photographed by R. E. Horsey

A record was obtained of 25 Chickadees, 15 Slate-colored Juncos, a pair of Downy Woodpeckers, one Hairy Woodpecker, one Brown Creeper, a pair of Red-breasted Nuthatches and 15 House Sparrows, which made a grand total of 2,768 individual visits to the various feeding-places during the day, as shown by the accompanying table.

A look at the table will show that birds are no 'fair-weather' visitors to the station, but were there during the storm and early morning, while in the afternoon, when the sun shone, the food-station was almost deserted, the birds preferring to rest or look for plant-lice and other food on the trees and shrubs nearby, thereby well repaying in destruction of insect enemies for the food supplied to them.

Observing a Slate-colored Junco eating suet is a new experience for us; however, only one bird did so and but sparingly.

Crows, Gulls and Redpolls were seen to fly over during the day. Our other stations are visited by Tree Sparrows, Pheasants and a pair of Ruffed Grouse, while the Redpolls feed in the birches, and the Cedar Waxwings in the various berry-bearing shrubs and trees.

As House Sparrows breed freely in the city nearby, in spite of several hundred trapped and otherwise destroyed, a few keep coming to the food-stations, and, if let alone, would chase all other birds away.

The Birds of a Day, at the Herbarium Winter Feeding-Station, Highland Park, Rochester, N. Y.

(Record 6.30 to 9.30 A.M. by R. E. Horsey, 9.30 A.M. to 3.30 P.M. by Wm. L. G. Edson, 3.30 to 6.30 P.M. by R. E. Horsey)

Figures denote number of individual visits

	Black-capped Chickadee					Woodpeckers		Brown Creeper	Red-breasted Nuthatch		Slate-colored Junco		House Sparrow		
						Downy	Hairy								
	Suet on limb	Suet on string	Food-hopper	Food-stone	Table	Suet on limb	Suet on limb	Suet on limb	Suet on limb	Suet on string	Table	Suet on limb	Food-hopper	Table	Food-stone
6.30 to 7.00 A.M.			35												
7.00 to 7.30 A.M.			39	9		1							1		
7.30 to 8.00 A.M.	12	8	75	12		1			1	3	26		4		
8.00 to 8.30 A.M.	2		23		6	1				2	35		3	61	2
8.30 to 9.00 A.M.	12	2	80	6		1			3	1	23		1	51	2
9.00 to 9.30 A.M.	7	5	63	5						1	21		1	42	
9.30 to 10.00 A.M.	6	4	27	5	1				1	1	33		1	118	1
10.00 to 10.30 A.M.	1	7	47	5		2	1		2	3	9		3	102	1
10.30 to 11.00 A.M.	13	1	30	3		2			2	1	13		1	104	
11.00 to 11.30 A.M.	9	2	46	5		1		1			19		1	62	
11.30 to 12.00 M.	9		48	3		1			3		12			21	
12.00 to 12.30 P.M.	16	2	63	11	1	1			1	2	34		15	199	2
12.30 to 1.00 P.M.	17	2	70	3				1		1	19		1	57	
1.00 to 1.30 P.M.	16	2	53	2						2	42	1	4	79	
1.30 to 2.00 P.M.	13		80	8	1				1		27	1	10	41	
2.00 to 2.30 P.M.	13	4	95	16		1			1		17		7	59	
2.30 to 3.00 P.M.	3	1	35	3		1			1		13		2	22	
3.00 to 3.30 P.M.			2				1		2		3			2	
3.30 to 4.00 P.M.	11	1	16	3	1	4	2				1		4	4	
4.00 to 4.30 P.M.	1		1						7					17	
4.30 to 5.00 P.M.									1					4	
5.00 to 5.30 P.M.									1						
5.30 to 6.00 P.M.															
Totals	161	41	928	99	10	17	4	2	27	17	347	2	59	1045	8

The Black-capped Chickadees, from 6.37 A.M. to 4.10 P.M., made 1,239 visits to all feeding-places.
The Downy Woodpecker, from 7.13 A.M. to 3.42 P.M., 17 visits from ½ to 13 minutes to feed on suet.
The Hairy Woodpecker, from 10.03 A.M. to 3.30 P.M., 4 visits from ½ to 2 minutes each on suet.
The Brown Creeper, from 11.30 to 12.50 M., 2 visits, a few pecks at the suet.
The Red-breasted Nuthatch, from 7.30 A.M. to 5.29 P.M., 44 visits to suet on limb and on string from ½ to 5 minutes.
Slate-colored Junco, from 7.44 A.M. to 3.50 P.M., 347 visits to food placed on table, and 2 to suet on limb and one for sunflower seed on food-hopper.
The House Sparrow, in spite of being occasionally chased, made 1,112 visits to table, food-stone and hopper.

Screech Owl Johnnie

By FLORENCE MERRIAM BAILEY

WHEN watching birds in northwestern Oregon in June*, just before daylight one morning, I began hearing queer little Owl-like noises from the garden, and that night at dusk, when they came again, I went out to investigate. Tom, the big house-cat who had tried to catch a Dusky Grouse who had brought her brood from the forest a few days before, had also heard the calls, and with the keen ears of a hunter distinguished them from the rest of the evening chorus and located them as coming from a long trellis covered with a dense thorny mass of Himalaya blackberries in the garden. Creeping up under the trellis he gave a tiger-like spring and mounted the frame with the proud air of having already secured his prey. But no prey was visible, and the briars reinforced my remarks so sentiently that he reluctantly jumped down.

By this time it had grown so dusky that I could discover nothing, but the keen-eyed fisherman of the family—we were near one of Oregon's famous salmon bays—joined in the search and, leaning close over the vines, finally exclaimed: "Here he is!" Even then I had to press on hard with my eyes, as Mr. Burroughs puts it, to see anything but a tangle of white blooming sprays. It was as baffling as a puzzle picture illustrating protective coloration, for the vermiculated down covering the small Owl made him fairly melt into his background of white blooming vines. There he sat, however, with his plump, unmistakable Owl-like form and blackish markings around his eyes, looking as calm as a king in the midst of his barricade of thorns. Wise mother! With his perfect disguise and a thorn *boma* that would baffle a cat, she might well have risked leaving him there alone through the day, though it were only a few steps from the house.

As it was too dark even to see if he had ears, I suggested putting him in a box until morning; but when the fisherman came with a gunnysack and a stout stick, quite natural paraphernalia for one of his profession, I began to weaken. Suppose the little fellow should get hurt! In frightened struggles his delicate little wings and legs might easily suffer from passes of that bludgeon. Then, if he were in a box all night, how could his parents feed him? In the morning they would have gone to the woods.

With a belated idea I hurried to the house and, returning, raised my arm high over the thorny sprays and flashed my electric torch over the Owlet until his lemon-yellow eyes drooped before the light. A downy nestling indeed! And, yes, there were tiny ear-tufts. Suggestions of a black facial disk, a light band under the bill, and a vermiculated black-and-white body completed the picture. Once more I raised the torch over his head to examine his potential ear-tufts, but he sat stolid as a sphinx, making no move and uttering no remonstrance. I had seen his markings as well, much better than if I had

*1914.

had him in my hand, which argues well for a new method in ornithological investigations, one warranted to leave nestlings unhurt and their mothers untroubled.

No sooner had I returned to the house, delighted with the discovery of our little neighbor, than the voices of his parents were heard out by the trellis. They had been silent witnesses to my flashlight examination of their nestling. Characteristic quavering Screech Owl calls and low, short, barking cries sounded within a stone's-throw of my window, and I peered out into the darkness, vainly trying to see what the birds were doing. What an opportunity to watch a family! I flashed my torch, but it would not carry. How exasperating! And still the soft quavering cries rang in my ears.

The next morning, when sitting on a log watching for Western Winter Wrens, I heard a Western Robin calling distractedly from the head of the garden. "Owls," I said to myself, and hurried over. The Robin, assuming the role of Town Crier, was inside a little grove where Western Golden-crowned Kinglets came afternoons, and was screeching shrilly enough to rouse the neighborhood. Forcing my way through brakes up to my shoulders, I entered the grove and was just about putting down my camp-stool when—there on the ground facing me a ball of gray down was snapping its bill at me! By daylight the dark barring made it look gray, instead of white as by flashlight. The infant Owl made a pass with his wings that suggested the threatening pose of the Long-eared Owl, and wormed his head and neck around, his small yellow orbs fixed on me with ominous malevolence.

Owl noises from a tree a few yards away led me to discover one of the parents on a branch close to a trunk—Screech Owl written all over it, from its wide, cat-like ears to its rotund, dark brown body. It craned down, looking my way and making anxious sounds that suggested the *wuk-wuk* of the Long-eared Owl. But, when I sat down, it returned to a natural position, and the glass revealed its eyes, losing their anxious stare, dulled with sleep; and soon, turning its back on us, it settled comfortably down for a nap. As it sat dozing, I noted the black streaks and white blotches on its feathers, and the brown bark-like tail. A slight movement in a tree close by made me look up. There sat Parent No. 2 on a slender branch about twenty feet from the ground, also near the trunk. Here was the family I had wanted so much to see, right under one roof-tree with me! Rare good luck, indeed.

To make better friends with the little Otus, I moved up within about a yard of him, but at this both parents sat up and took notice. No. 1 raised its cat-like head and looked over its shoulder at me with big, round, yellow eyes, and No. 2 whipped around facing me, leaning down, wide awake, anxiously calling *quip, quip*, so close that I could see the dark lines about its bill and the dark doubly crossed mesial streaks of its body. The helpless object of all this solicitude was cuddled up close to a supporting hump of earth, wisps of down blowing all over his fluffy little gray form.

At intervals the nestling, as if rising manfully to the occasion, would twist his head and neck around and make droll little noises, evidently intended to be awe-inspiring, or thrust his fuzzy head forward with an absurd little threatening *woo–oo!*

But, by dint of much soothing talk, he gradually contented himself with snapping his bill at me, and then his nictitating membrane rose over his eyeballs and the big round eyelids gathered in till they became pink, lax and irregular, almost closed rings. Nevertheless, little Johnnie, for so he seemed to name himself, though perhaps it should have been Johanna, was by no means sound asleep, turning his head at a noise from the house and noticing when I tested him by moving my hand. Even when his eyelids closed to irregular slits, at a slight movement of my notebook he roused again, his watchfulness contrasting with the obliviousness of the somnolent old folks.

Encouraged by his growing indifference, I moved a little closer, this time getting up within about a foot of him, and, though he snapped his bill, he made no move to get away. As he opened his eyes to look at me, his pupils seemed blue in the yellow iris, and narrowed to pin-heads. He was now so near I could see that his turgid nostril had radiating hairs and dark lines above it, and, when his lids were down, black lines from his bill made sections of facial disc.

Poor little fuzzy nestling! It seemed as if his mother should have been brooding him instead of napping up in a tree, leaving him on the ground alone in a world full of cats and devouring monsters. Pulling my gray sweater sleeve down over my hand and speaking more softly than ever to him, I gently smoothed his downy head and back, at which he merely snapped his bill perfunctorily. A few low, quavering calls from a parent were answered by a contented infantile quaver, and all was well.

If I could only get a picture of my small friend! When I went to the house for my camera the family were greatly interested and the fisherman and his little sister returned with me. Goldilocks, who had never seen an Owl before, was greatly taken with "the dear little fellow," and danced around ecstatically. While getting Johnnie and Goldilocks posed, the mews of Tom and his mate had to be answered by hurled sticks, for one pounce and a snap, and poor Johnnie's short story would have been over.

Unfortunately none of my pictures was a success, but they served to acquaint Johnnie with the family and enlarge his experience. When I had carried him out to the light in my soft hat, which he at once accepted as a cosy nest, Goldilocks' mother brought out some raw meat, and, after surprising him with a noonday meal, cuddled him with such motherly instinct that he willingly perched on her finger while his picture was being taken. Then little Goldilocks held him timidly in her lap for another snapshot, and at last he was carefully set up on a board of the trellis with a cross-bar to lean against, where we felt that he was much safer than on the ground in the grove. Our only fear was

that he might try to move and fall off the trellis, once more becoming a prey to cats. As soon as Goldilocks had eaten her dinner, she hurried out to see if he were safe, and ran back reporting that he was fast asleep. And later, when I started on my afternoon bird-rounds, his eyes were still tight shut.

While I was out, I heard a commotion in the grove and found that the Town Crier had again been rousing the neighborhood, for besides himself, two California Purple Finches, a Golden Pileolated Warbler and a Western Tanager were sitting around, as if waiting to see what their new and terrible neighbor proposed to do. The old Owl had withdrawn to the shadiest edge of the grove, where it could finish its nap most comfortably, but at the outcry gave a low quavering call as if to see if all was well with its family. When answered by its mate and one of its young, it scratched its head and plumed its feathers contentedly. As it did nothing worse, its anxious auditors finally dispersed.

At dusk I heard troubled monosyllabic calls, for Johnnie was not where he had been left by his parents, but he evidently informed them of his whereabouts, for the next morning he had disappeared from the trellis. That afternoon, to my surprise, I found one of the old Owls perched on a dead tree outside the grove. What was it doing in the open in the daytime? The explanation was not far afield. Below it, on a charred stump only a few feet above the ground sat little Johnnie, sorely in need of guardianship.

For three days after that, ornithological investigations were made difficult by the last throes of the Oregon rainy season. On the fourth day, during a short clear interval, on passing the Screech Owl grove, I heard the low familiar tremulous note and hurried in through the wet ferns. After a disappointing silence there was a low call and an answer, followed by the rattling of branches almost over my head, when one of the old Owls flew two or three rods across the grove to the tree in which its mate sat, soon going on, its big brown wings disappearing in a dark thicket. When a small, quavering voice came from the edge of the grove, the remaining parent flew out in its direction. Happening to raise my eyes, I discovered Johnnie on a hemlock branch hugged up against the trunk, safely up from the ground at last. When the wind rushed through his tree and swayed his branch, he turned his head, but only cuddled closer to the trunk, and, fluffing up his feathers, put his bill down into them. When his parent called, there was no answer, and when the rain came down again and I went out through the ferns beside him, though I spoke, the little gray figure, gray as the bark of the hemlock, sat with tightly closed eyes and answered me never a word.

The next day I found an Owlet that seemed to be smaller and more helpless than Johnnie sleeping well out on a branch. Soon after, owlish noises were followed by a fall. Forcing my way over logs and through brush and ferns I finally reached a burned-out stump. Down in the bottom of the blackened pit sat the poor little Owl! Later in the afternoon I heard infantile Owl talk

from the bracken by another stump, and imagined that the rest of the family were in hiding. It might have been a good idea to keep the youngsters down inside stumps till they were well able to fly! Then they would be comparatively safe from cats.

At dusk that night, Goldilocks' mother called at my door, "Want to see Johnnie?" explaining as she brought him in that when she had gone to shut up her chickens she had heard Owl-talk in the grove, and had got her son to find the little fellow for her. Johnnie was quite used to us by this time, and, though he snapped his bill a little from force of habit, submitted willingly to being stroked and petted. Bread and milk, however, in view of expiated mice, like a good and proper Owlet, he firmly refused.

After this the fisherman, eager to see the old Owls at close range, tried to snare them and temporarily frightened them away, but, before I left, their voices were occasionally heard at night, and, after I had returned to the East, letters from Goldilocks brought the good news that Johnnie's family were still in the neighborhood.

Notes on the Plumage of North American Birds

FORTIETH PAPER

By FRANK M. CHAPMAN

(See frontispiece)

Sennett's Thrasher (*Toxostoma longirostre sennetti*, Fig. 1).—Sennett's Thrasher is a Texan race of the Mexican Long-billed Thrasher (*T. longirostre*) and is probably the form from which our Brown Thrasher has been derived. It is not so rufous above, and the bill is longer and more curved than in our Thrasher, but the resemblances in plumage, habit and song between the two are so strong that we are warranted in believing them to be representative of each other.

The sexes are alike in color, and the limited seasonal changes in color are due chiefly to wear and exposure.

San Lucas Thrasher (*Toxostoma cinereum*, Fig. 2).—The sexes are alike in color in this species, and the slight seasonal variations in plumage are due to wear and fading. The juvenal plumage is browner above and more finely streaked below. Among our Thrashers, this species is distinguished by the width of the white marks at the ends of the tail-feathers.

Two races of the San Lucas Thrasher are known. Both are confined to Lower California, one (*T. c. cinereum*) being found in the Cape region, the other (*T. c. mearnsi*) to the west-central coast in the vicinity of San Quentin Bay.

Bendire's Thrasher (*Toxostoma bendirei*, Fig. 3).—As with the preceding species, the sexes in Bendire's Thrasher are alike in color, and the small amount of seasonal change is occasioned by wear and fading. In very worn plumage the wing-bars are not evident and the spots on the under parts are barely observable.

Curve-billed Thrasher (*Toxostoma curvirostre*, Fig. 4).—As with other Thrashers, the sexes in this species are alike in color, and but little variation in plumage occurs through the year. In worn summer dress the wing-bars and spots on the underparts are not evident. The nestling has the lower back and rump decidedly browner, the markings on the underparts more streaked than in the adult. The tail-feathers have ill-defined brownish tips which seem to fade quickly, leaving the feathers merely paler at the ends and, in Palmer's Thrasher at least, with no trace of white.

Two races of this species are found in the United States, both being mainly restricted to our Mexican border. The Curve-billed Thrasher (*T. c. curvirostre*) occurs from southeastern New Mexico to the lower Rio Grande Valley, and southward; Palmer's Thrasher (*T. c. palmeri*), from southwestern New Mexico and west-central Arizona southward. There are two additional races in Mexico.

ROUGH-LEGGED HAWK

Photographed by H. and E. Pittman, Wauchape, Sask.

Notes from Field and Study

Feeding Habits of the Downy

I first learned of the nature of the swellings on the goldenrod stalks in zoölogy class, during the latter part of October, 1915. I had noticed them many times when walking through fields and swamps, but never had investigated them, taking them merely as a matter of course.

November 27, 1915, I found a patch of goldenrod stalks containing these galls. I gathered a few of the larger ones, thinking that I would wait for the adult insects to emerge in the following spring. When I came to examine them more closely, later on, I found that some of the galls had irregular holes in them, very much resembling holes cut with a thin-bladed knife. These holes ranged from a sixteenth to a quarter of an inch in diameter on the outside, and got smaller, like a cone, as the hole went toward the middle of the gall. Being puzzled as to the cause of these holes, I took them to my zoölogy teacher, to get an explanation. She said that it was probably caused by a bird of some kind, but was not aware of its identity.

December 4, I again came across a large patch of goldenrod stalks, many of which bore galls. This time, upon finding more galls containing these holes, I decided to find out if possible what caused them. Almost immediately I discovered a bird perched upon the stem of a goldenrod plant, drilling into the gall very industriously. Upon closer examination, it proved to be a Downy Woodpecker. I saw a number of these little birds at work and watched them for many minutes. Finally I picked several of the galls that the birds had attacked and cut them open. They were all empty.

I walked around this field and counted about ten of these birds. The patch covered nearly an acre of ground, and most of the stalks had one or more galls. Nearly half of the galls had been robbed of their inhabitants, so I drew the conclusion that the Downy Woodpecker must eat many grubs each day. If this is the case, it is of benefit to mankind and should not be destroyed.—R. Eldred Boschert, *Syracuse, N. Y.*

Observations on Some Winter Birds at Sigourney, Iowa

The winter season being the bleakest of the year, especially in the northern half of the United States, it is quite important during that time of year to cultivate the friendship of the birds, the ever sprightly and cheerful harbingers of a better time to come.

As the struggle for the necessities of subsistence is the great moving power of the entire living world, this of course includes the birds and it is especially true in the wintertime. Therefore, a birds' lunch-counter offers the best means of gaining their confidence, friendship and cheering presence, as well as their aid in ridding orchards, gardens and shade trees of the larvæ and eggs of numerous harmful insects, hidden in crevices and under the bark of trees, awaiting the springtime to begin their destructive work.

For several winters I have maintained such a lunch-counter upon a shelf five feet above the ground against a large shade tree directly in front of, and some ten feet from, the kitchen window. This shelf is 16 x 20 inches in size, with a border an inch high, and hinged so it can be dropped to facilitate cleaning.

Upon this shelf I keep a supply of black walnuts thoroughly cracked, so there are no large pieces either of shell or kernel. If this precaution is not taken, the Jays and Nuthatches will carry all the larger pieces away and hide them. Birds like walnuts or butternuts better than bread crumbs or any other kind of nuts. Walnuts are usually cheap and easily obtainable in the regions where deciduous trees flourish. Directly above this shelf,

and about fifteen feet above the ground, nailed against the trunk of the tree, I keep a chunk of suet or fat beef.

The birds that come regularly for a portion of their fare are the White-breasted Nuthatch, Black-capped Chickadee, Brown Creeper, Hairy and Downy Woodpeckers, Blue Jay and more rarely the Tufted Titmouse, Cardinal, and Slate-colored Junco. I regard all of these species as desirable excepting the Blue Jay, whose presence I discourage. I will here give my reasons for this inhospitable treatment of Mr. Jay. I have observed Jays robbing the nests of the Catbird, the Orchard Oriole, and the Mourning Dove, and I have no doubt they rob the nests of all other small birds when they find them. I have also seen the Blue Jay steal the domestic hen's eggs and catch and devour full-grown Juncos and Tree Sparrows, also young chickens from a few days up to two weeks of age. He is regarded with suspicion by all the smaller birds, and whenever he comes to the suet or lunch-counter all the other birds instantly disappear and are not seen again until Mr. Jay is safely despatched or gone out of sight.

All the regular boarders named above partake of both the suet and the fare on the lunch-counter, but the Woodpeckers prefer the suet, while the others spend most of their time on the shelf. The Titmouse and Junco come to the shelf only occasionally, and the Brown Creeper contents himself usually by picking up the small particles dropped by the others. There is scarcely a minute of daylight when some of our bird guests are not present; but they are all somewhat pugnacious, and it is very rare that more than one is found on the shelf or at the suet at one time. Several of the Chickadees will feed at once, but the others will not associate with them or with each other.

The antics of the Hairy Woodpecker, when he comes down from the suet to the shelf, are most ludicrous. He always crawls down backward, with many obeisances from one side to the other, and looking backward now on this side and now on that, occasionally advancing a little, then backing again, until he finally gets down to the shelf and, after impressively ducking his head a few times, he eats with great relish. But he always alights at the suet, and goes through these maneuvers every time he comes to the lunch-counter.

Our shade trees and small orchards are usually quite free from insects in the summer time, and for this I give credit in large measure to our winter birds, as well as to those that come in the spring.—E. D. Nauman, *Sigourney, Iowa.*

A Sparrow-proof, Individual Feeding-Device

With the thought in mind that the time to pass along ideas is when interested in them, and with the additional impulse of the full spring song of the Song Sparrow, February 1, due in this case to winter-feeding, I am led to offer my plan for feeding, hoping to interest someone troubled with the House Sparrow and Starling, and desirous of attracting other birds about the home.

TREE SPARROW ON SWINGING FOOD-DISH
Photographed by Wilbur F. Smith

Begin in the autumn to throw out chick-feed or other fine seed anywhere—a very little will advertise the spot—and try not to be without this bait until cold weather

sets in; then be sure never to neglect them. A protected spot, porch roof, unused porch, old shutters or boards so arranged as to make a small covered spot, all protected from the cat, will attract all birds. Then get any number of small strainers four or five inches in diameter, break off the handles, hang up with strong twine or fine wire as high from the ground as one can reach, not too close to a perch, suspend from the center of the bottom a weight heavy enough to steady it, keep supplied with seed and when the ground is covered with snow the Junco, Tree and Song Sparrows will feed from them, but I have never seen a House Sparrow light on one. Tree Sparrows, during a high wind, hang on until they seem actually blown off. Twenty-five baskets hung in a space five feet square will feed twenty-five birds at a time, while the same space in the open would accommodate but one good fighter.

A very loosely crocheted bag hung up by a piece of twine supplied with suet will attract the Downy and Hairy Woodpeckers, Nuthatch, Chickadee and Starling, but the Starling cannot waste it. Suet tried out and ground-up raw peanuts added while cooling, will be an attraction for the Chickadee and Nuthatch.

Beside those mentioned, the Purple Grackle, Robin, Sparrow Hawk, Goldfinch, Blue Jay, Purple Finch and what was supposed to be a hen Pheasant, have been visitors.—James F. Hall, *Norwalk, Conn.*

A Distinguished Guest

We have such a rare and distinguished guest at our bird banquets this winter that I want him duly recognized.

This real thrill is a Tufted Titmouse, who has been a daily visitor since December 24, when his call first startled me out of the busyness of the-day-before-Christmas. I did not get a good enough look at him that first time to be quite positive in my identification, but felt sure enough to be greatly excited, and the succeeding days proved that I had not 'called him out of his name.'

We haven't a convenient tree in close range of our south living-room windows, but these same windows are arched over with a trellis, where in summer vines clamber and bloom, and there we have established our feeding-station, within a few inches of the glass.

On one side, just above the level of the sill, we have fastened to the trellis a shallow box where we put cracked nuts and cereals. Above the box hangs a 'perfectly darling' cupboard, made after the 'plawns an' speecifications' given by Arthur Jacot, of Ithaca, N. Y., in Bird-Lore for September–October. We have three augur-holes bored into a small stick of wood, which is hung by a screw-hook to the trellis, and can be easily taken in for refilling. The holes are crammed with suet, and it is certainly a popular stand. On the opposite side of the arch, well above head-height, hangs a fine large bone, contributed by the smiling, round-faced butcher.

The Tufted Titmouse is so well pleased with our offerings that he may be seen at almost any hour of the day proving one or another of these puddings. And he is quite given to doing 'cute stunts' on the wing.

He is a cocky little chap, and makes the other boarders stand around, though there is never any real quarreling among any of them.

One day I saw him ranging all over the front of a house made of pebble-dash and timber, picking dried gnats out of the crevices and cobwebs. 'Vantage number one' of not being *too* good housekeepers—specially on the outside!

He usually calls us up at sunrise with his clear *peto* many times repeated—which we hear rather infrequently during the day. He says *chick-a-dee-dee-dee*, though it is louder, hoarser, and more slurred than the call of his little black-capped relatives. One warm, wet day he sat up very straight and said *chick-ul, dick-ul, dick-ul!* with great deliberation and emphasis, and looked mightily pleased with his performance.

We have 'stacks' of Chickadees. It seems as if they must be in solution in the

ambient air and the rattle of cracked nuts in the box precipitates them; I can hardly get my hand *out* of the box before a Chickadee is *in*. But by actual count I haven't seen more than eight there together.

The Blue Jays we have always with us. They hunt for the cracked nuts that haven't fallen apart, and if they can find enough without sharp edges, they will pack their greedy gullets and fly off with as many as five at a time and not more than two of them visible! I never knew before what storage tanks these Jay-birds carry! One finds out lots of things from a feeding-station. We have White-breasted Nuthatches and Downy Woodpeckers—so tame they will not 'move over' when we go in and out only a few feet from them.

And this winter, for the first time, we have had Juncos. They are here winters, quite commonly, but usually stay back among the evergreens, and ours is a very wind-swept location.

With all these little busy-wings just outside the windows, and the gay little bank of bloom inside—red, pink, white and blue of Chinese primroses, cyclamen, narcissus, and cineraria—we have a moving picture with the color-courage of a most seductive chintz—and a 'bird design' into the bargain. And I wonder and wonder why more people don't give themselves this keen and wholesome joy.

'Speak to the earth and it shall teach thee, and the fowls of the air and they shall tell thee,' so many beautiful things.—Eugenia Gillette, *Lake Geneva, Wis.*

Bird Notes from Southern Wisconsin

Early on the morning of October 19, 1915, a neighbor of mine brought to me a tiny bird which had been stunned by flying against her dining-room window. The lady was unable to identify it, but the first glimpse showed me it was a Golden-crowned Kinglet in full adult plumage.

When I first took him in my hand, his beak was open, and in his eyes was a slightly dazed expression, but as I lightly stroked his little head and body, his eyes cleared and brightened, he closed his beak, and began to 'sit up and take notice' of the circle of interested admirers of which he was the center.

We had an excellent opportunity to study him closely, and, as I gently parted the lemon-yellow feathers of his crown, we could plainly see the beautiful flame-orange crest beneath.

He seemed almost to enjoy having his head lightly patted, but appeared to resent my uncovering his golden crown for inspection.

He was evidently unhurt and none the worse for his unusual experience, for he soon flew from my hand with glad cheeps and chirps.

As he disappeared around the neighboring house, he came dangerously near flying again into one of the windows, where I could plainly see the blue sky reflected; but evidently his accident had taught him a lesson, for he veered sharply to one side just in time to avoid violent impact with the glass.

I have read with interest Mr. J. Wm. Lloyd's account of the 'whisper-songs' of birds in the autumn, and, on October 3, 1915, I heard distinctly a Bluebird sing his 'whisper-song' as he perched on the roof of a nearby carpenter shop. His beak was apparently closed, thus making the notes sound very soft and dreamy.

He did not seem to see me watching him, and so continued singing the entire 'spring' song for some time.

Before I finish these notes, I cannot resist describing my method of feeding the birds during the winter months. Among the various kinds of food, I find that peanuts are more than welcome to the Nuthatches and Chickadees, and, as I have no manufactured shelf or feeding-counter, I use our elm tree, strewing the finer portions in the wide space afforded by the low, forked limbs, and wedging the larger pieces of nuts and suet under the rough bark, and in the holes drilled by Woodpeckers.

This is unusually popular with the birds of this locality, the Nuthatches especially seeming fond of extracting the fresh peanuts from under the bark.

A tree trunk can thus be well stocked for several feet up from the ground, and, in a locality free from marauding cats, prove to be a source of interest and amusement for old and young alike, besides furnishing a splendid place for bird photography.—Ethel A. Nott, *Reedsburg, Wis.*

Wheat-Wheat, a True Story

One day in the autumn when I went out to look after my poultry, I discovered, to my great delight, a flock of six or seven Bob-whites quietly picking up grain with the chickens. They were rather cautious, and gathered only those kernels that had been scattered the farthest away.

At intervals afterward we would hear the pleasant *bob-white, old bob-white*, call from the stone-fence thicket; then in the midst of the clover blooms across the road; again from the top rail in the orchard. But by and by winter set in with its snow and sleet and biting cold, and, as we gathered in the evening around our own cheerful fire, we often talked about our little friends and wondered if they had found a comfortable shelter.

One morning after a severe blizzard, a neighbor and I were passing a hazel thicket which grew by the side of a ditch, when something attracted our attention. Alas! Here, all huddled together, were the little frozen bodies of our friends. Two, however, showed signs of life, so we each placed one inside of our cloaks and hurried to the house, where, with warmth, they soon revived. But one had his legs frozen up to his body, and finally died. The other, a female, became as tame as any chicken, and lived in our kitchen, where we had placed a small box of chaff for her bed. When spring opened, we offered her her liberty, but she always returned, and, if the window was shut, would tap on the pane and call to us in her pleasing little voice, which resembled a whispered *wheat, wheat.*

One day when she was outside, suddenly there came a call from the gate-post close by, *bob-white, old bob-white.* Little Wheat-Wheat was frightened and fluttered to the window, where she tapped loudly for us to let her in. So long had she mingled with only us humans as companions she had forgotten her 'kith and kin.'

But Mr. Bob-white was an ardent wooer, and often we would hear close-by the familiar call, *bob-white, bob-white.* Gradually Wheat-Wheat became acquainted, and finally made rambles away with her new friend, but returned to us at intervals, and always to her box at night. One day, while driving Daisy home from pasture, she carelessly stepped on a nest in a bunch of coarse grass close to the edge of the slough. It was Wheat-Wheat's nest of thirteen eggs, and all were crushed but four. We carefully arranged the nest and replaced the four uninjured white eggs, but Wheat-Wheat never went near it again, and she disappeared about three weeks later.

An old white turkey hen had stolen her nest somewhere, so I decided to go and search carefully all through the tangle of woodbine and blackberries that clambered over the old stone wall. I stopped to gather some prairie roses that leaned against the old wall, when my hand touched something! Instantly the old turkey and her nest faded into oblivion, for there, right in the center of the bush, concealed so carefully, was a nest full of tiny white empty shells. The secret was out. The brood had hatched and were somewhere near us. Soon afterward we found them, and Wheat-Wheat with them, as proud as any bantam hen you ever saw. The old stone fence enclosed one side of the pasture, with a gateway of bars in the center. Here Wheat-Wheat and her children spent the rest of the summer, and often passed back and forth through the gap. Every day grain and bread crumbs were scattered at the bars for them. By autumn, they, ten in number, were all full-fledged Bob-whites.

Just before winter set in they left us, and Wheat-Wheat with them. It seemed like parting with one of the family.—Mrs. Lena Waite, *Rochester. Wis.*

Quick Lunch

The snowstorm that came so early in December, 1915, brought with it, as usual, a host of winter birds, quite willing to sample every kind of food placed for them.

This willingness soon grew to be a persistent desire for 'quick lunch.' Two food-boxes, each with shelf for crumbs for seed-eaters, and a large table on the porch

A HOME-MADE FOOD BOX

Wire screen fastened at bottom with two double-pointed tacks with a hook at the top. When unfastened the wire drops like a lid

Photographed by Margaret S. Hitchcock

against the window, covered with all kinds of crumbs, furnishes food, so far, for two pairs of Downy Woodpeckers, one pair of Nuthatches, several pairs of Chickadees, dozens of Juncos, Tree Sparrows, and two or three Song Sparrows.

It is extremely interesting to study the great energy and the charm of these birds. The Nuthatches always come with great haste, tucking crumbs under the bark, hiding many times more than they can eat; then along comes the Downy toward the box, hitching upward or downward, no difference to him, and gracefully eating the crumbs the Nuthatch has hidden as he comes. The Chickadees flitting hither and yon, now at the boxes, now at the table, on the ground, everywhere; Juncos and Sparrows, hopping on the ground underneath, getting every tiny bit that drops, never an atom wasted. This is the busy time for our winter birds. And does it pay? you ask. Ah, if I could but express my feeling of gratitude for their confidence and companionship! They verily act as if they had found an enchanted garden. The Chickadees eat from the hand, and when the door is open come inside, look about, fly here and there, and, when quite ready, fly out again; but then we have long since parted with pussy, and it pays. We loved our cats always, but we find we love the freedom of the birds more.

When the suet in the food-box gets low, the Downy always calls persistently, with his metallic chirp, to say it is 'most empty. We understand each other. I place more suet in the box, and I do not hear his voice, except occasionally, farther away, until it is quite gone again; then comes his low persistent chirping, at the same time stretching his neck and bobbing his head, to see if I am not coming. Then the happy chirping of each one all day proclaims food a-plenty.—Margaret S. Hitchcock, *R. D. No. 2, Morristown, N. J.*

A Minnesota Feeding-Station

The feeding-station near my house in this city has been and is of unusual interest this winter.

December 23 was a 'red-letter day.' During the noon hour, we saw for the first time a flock of eight Evening Grosbeaks. We had looked for these birds every winter, but never before had we been so fortunate as to see any here. They were first seen

in a tall box elder tree near the house, where they were eating seeds. Soon some of them flew to the ground and to neighboring trees. Just then a Bohemian Waxwing was seen at the honeysuckle berries at the garden gate; then another and another, and still others, until the number was seven. The male Grosbeaks were perfect in their dress and delightful to see, but the Waxwings were the height of perfection in dress, and were the most beautiful we had ever seen. They hobnobbed with the Grosbeaks, and were almost as friendly with them as they are with each other. For a few minutes three or four of each were on our neighbor's kitchen roof in a space not more than ten feet square. They seemed to find something to eat there, and it is possible they did find pieces of suet and nuts that were tucked away in the cracks by Nuthatches, from our feeding-table. The Grosbeaks have been back many times since, and seem to have decided to spend the winter in our city, but the Waxwings have not again been seen at our place, although I have seen them in other parts of the city. Heretofore we have seen only one or two of these beautiful Waxwings at a time, and then not every winter.

A day or two previous to this, a Tufted Titmouse had made hasty and short visits to our nut-stick and suet-baskets. This food is not more than ten feet from our living-room window, but he did not seem shy even when we were at the window. Some days we would not see him at all, and we wondered why; for we knew the Chickadees, Woodpeckers, and Nuthatches were there every hour or oftener during daylight, and the Titmouse must surely eat as often and as much as a Chickadee. One day I chanced to put out some hemp seeds I had kept for two or three years, in case of severe spring snowstorms during migration. Since that day our Tufted Titmouse has been our most faithful 'star boarder.' His steel-gray coat, erect, proud crest, pitch-black blinking eye, and rich brown sides distinguish him.

I have, nowhere, found any account of a Titmouse having been observed anywhere in Minnesota before. We have had 30°-below-zero weather here this winter, but he seems as happy on those days as on any other, although his visits to the hemp-hole are not so frequent.

Our other steady boarders consist of five Chickadees, four or six White-breasted Nuthatches, four Downy and four or five Hairy Woodpeckers, and one or two Brown Creepers. This necessitates a number of plates at the table, as they never eat, two at a time, at the same plate. My main table is a partly decayed basswood log, with three old Woodpecker holes near one end. The log is five feet long and about seven or eight inches in diameter. This I brought home with me on one of my return trips from the country. It is suspended horizontally from a limb of a box elder tree that conveniently projects at the right angle. On the underside of the log near either end are two pieces of galvanized meshed wire, six by eight inches in size. They are my suet-baskets, upon which a slice of suet of convenient size and thickness is placed, and the log on top of this. My object in placing the baskets under the log is to keep the House Sparrows from eating it or annoying the other birds while they eat. In the holes in the log I put nuts and hemp seeds every morning or late at night. The wires by which the log is suspended are about five feet long. This gives the wind a good chance to swing the log back and forth, much to the delight of the feeders. The distance from the ground to the log is about four and one-half feet—quite safe from cats. Two feet away on the tree trunk I have another suet-basket and also a nut-stick, and for a reserve table a nut-stick at the window. This gives room for seven boarders to eat at the same time when all the plates are filled.—G. H. Luedtke, M.D., *Fairmont, Minn.*

A Golden Eagle in Virginia

On November 8, 1915, a Golden Eagle was captured on our farm near Troutville, Virginia, in the foot-hills of the

Alleghany Mountains. The bird was first seen in a garden on Sunday, November 7, by the family living in the tenant house. The men at once tried to shoot it, but it escaped.

The next morning Harry Caldwell, son of the tenant, took his gun and started to look for the huge bird. He found it in the woods a quarter of a mile from the house, and shot at it three times. Fortunately, he only stunned the Eagle and, with the assistance of two other men, succeeded in binding him and carrying him home alive.

On hearing of it, I took my 'Bird Guide' and went at once to see the Eagle. He corresponded exactly to the description given of the Golden Eagle in Chas. K. Reed's 'Water and Game Birds East of the Rockies.' He measures 35 inches in length and 6 feet, 10 inches from tip to tip of the wings.

Harry Caldwell, who is a poor boy in feeble health, exhibited the Golden Eagle in Roanoke, Virginia, the past two weeks, in order to secure funds for medical treatment, and realized $300 from the exhibit. The Eagle has thoroughly recovered from its wounds, one of which was on the beak, another on a claw, and I failed to locate the third.—Mrs. B. F. Shaver, *Troutville, Va.*

House Sparrows Destroy Crocuses

I never knew how far down the animal scale ingratitude extended until the depredations of a flock of House Sparrows awakened me to the fact. All winter long a sense of pity for these starving birds, shuddering in the deep snows, caused us to feed them, day by day, almost lavishly. The snow disappeared at length, and like magic, thousands of yellow crocuses starred the lawns about our home, a joy to us and to our friends. But one day the old half-breed Indian, who is always pottering about the grounds, came with a querulous message: "Come out, and see what these d—— English Sparrows are doing! They are tearing the crocuses in pieces!"

Sure enough, they had plucked the petals from many of the delicious flowers, in pure wantonness. The grass was littered with them. The abominable little hyphens would swoop down on a clump of glowing blossoms and tear them to pieces in a sort of fury! Frightened away, they would return again and again, like 'sportsmen' that revel in the insane joy of murder.

It has been our infelicitous experience, again and again, on rising, to find that these pirates of the air had sailed down with the dawn and plundered our golden argosies. The last of the flowers were rifled yesterday. Has any one else had this unique form of depredation by the House Sparrows?—Geo. T. Welch, *Passaic, N. J.*

Evening Grosbeaks and Other Rarities at Bethel, Vt.

The field-notes concerning Evening Grosbeaks have interested us as we have been watching them here, this last winter. On February 5 one female appeared in our maple. On February 18 a female was with Goldfinches in our sumac tree. March 12 brought us a male, eating seeds from a locust tree. Several people reported one or more of these birds about the town. I saw no more until April 23, when a flock of twenty appeared on another street. These birds stayed about that locality. I saw the flock again on May 9, and on May 14 I found one bird, a female. This is the latest date I have for 1916.

Last year, I noted, for the first time, the nesting of the House Wren in our village. A boy put up a box, made not at all according to the rules, but the Wrens filled it full of sticks, and apparently lived happily. This year another boy, in the same neighborhood, has a pair of House Wrens in a box that is made with a proper opening, though the box is unnecessarily large. Another House Wren sings in a locust grove on a different street.

On May 16, a neighbor came in the rain to tell me of great white birds over the river. They proved to be a pair of Caspian Terns, birds that we have never before seen here, though we occasionally see

Gulls of different kinds. The downward drop of the great red beak, in flight, was the first thing to suggest the species. The birds stayed two days. When not flying, they stood on the sand-bars in the river, but, when the storm raised the water over the bars, they left. A thunderstorm that came the night before we saw the birds may have driven them inland.

One more unusual sight for June, in our village, is the appearance of Pine Siskins, several of which have frequented our yard of late.—Eliza F. Miller, *Bethel, Vermont.*

A Chimney Swift's Care of Its Young

The following extract from a letter by Mrs. Sophia W. Morgan, of Madison, Wisconsin, is sent without her knowledge, but I think she will have no objection.

"Since we first went to the farm, Swifts have built nests and reared their families in our chimney; last summer (1915) the same. The day was raw and wretched when we saw three of the young flying around the house. About four o'clock I went to my room, and on the alcove screen saw what I at first thought to be a large bat, but going close to it found it was a Swift. The windows open out and the screens are inside, and it was on one of these the Swift was fastened. (Its claws have hooks unlike those of other birds.) The windows face the east, so when open protect from the cold north wind. I called M., and she soon discovered that it was a mother bird and under each wing she held a young bird. We examined it and talked in its very face, and though among the most timid of birds, not a flinch was visible. I should have closed my window at night, but the little mother continued to wrap her young and stayed through the night. I scarcely slept, rising often to see the devotion, almost superhuman. At nearly nine in the morning they were still there, but soon flew away."

Mrs. Morgan has been a bird-lover and observer for several years, and sees with thought as well as with eyes.—Susan M. Williamson, *Elizabeth, N. J.*

Evening Grosbeaks at Smyrna, N. Y.

A flock of six Evening Grosbeaks have visited Smyrna, Chenango Co., N. Y.

They came March 11, 1916, and remained three weeks, appearing in the morning and again in the afternoon of each day, feeding upon locust seeds.

The birds were fearless, which gave a fine opportunity to study their coloring by the aid of the field-glass—a beautiful sight when the ground was snow-covered. —Mrs. W. L. Chapman, *Smyrna, N. Y.*

A Late Record for the Evening Grosbeak

On February 9, 1916, a flock of fifteen or twenty Evening Grosbeaks were seen by Miss Hattie T. Burnham, at Fort Ann, New York. Until the last of March, one or two birds were seen about the village streets gleaning maple and elm seeds. May 20, Silas Vaughan asked me to come to see a strange bird which had been about the maple trees in his yard all day. It was a beautiful male Evening Grosbeak. It was quite tame; and early in the day had been seen drinking from a pipe under the kitchen window. The following day, the bird was gone.—Stewart H. Burnham, *Hudson Falls, N. Y.*

Chased by a Great Horned Owl

Toward twilight of a September day in 1914, I was sitting in a canoe up the Inlet above Second Connecticut Lake, N. H., watching for an Owl which, I believed, used as a hunting-stand one or more of the many dead trees. Suddenly a Belted Kingfisher shot upstream, flying low over the water and yelling bloody murder, a Great Horned Owl a few yards behind. They appeared from around a bend below me and disappeared around a bend just above, the Owl still in close chase, but the Kingfisher presently swung back over the trees alone and passed on downstream. That the Owl, its first swoop failing, continued so far in pursuit instead of giving up at once, seems to me of interest.—Charles H. Rogers, *New York City.*

BANK SWALLOWS
Photographed by A. A. Allen, Ithaca, N. Y.

Book News and Reviews

Land Birds of Northern New York. A Pocket Guide to Common Land Birds of the St. Lawrence Valley and the Lowlands in General of Northern New York. By Edmund J. Sawyer. Illustrated by the Author. Published under the auspices of the Watertown Bird Club, 1916. 90 pages. Paper 35 cents; cloth, 50 cents; both postpaid. For sale by local bookstores, and by A. C. Rogers, 325 Jay St., Watertown, N. Y.

The resident of northern New York who is a beginner in bird-study should find this a handy little (3¼ x 6⅛ inches) companion in the field, to tell him the names of about 130 of the commoner land birds of his region. The arrangement is in groups, such as 'Brightly Colored Birds,' 'Tree Climbers and Creepers,' etc., in which, it is believed, a beginner can find his birds more readily than if grouped in families of which he knows next to nothing. It would have been still better, perhaps, to base the entire arrangement on *one* feature, such as color, size, habit or habitat. One seeing his first Red-headed Woodpecker would be puzzled whether to look for it in one of the groups mentioned above or in 'Birds Distinctly Marked,' or 'Birds of Distinctive Outline or Form.' It is taken for granted that the serious student will have at home some bulkier work for further reference. To the Watertown bird-lover this booklet will be of particular value in letting him know what birds visit the city park, and where and when to expect them.

More care in some of the descriptions would have added to the value and not to the size of the volume. No mention is made of the characteristic tail-pattern of the Magnolia Warbler, or of slight but important color-differences between the Northern and Migrant Shrikes. The female Rose-breasted Grosbeak should be better described than 'Like female of No. 517 [Purple Finch].' There is no adequate description of the Blackburnian Warbler and the colored picture is drawn so as to conceal its unique orange throat. A Kingfisher would doubtless object to having the Blue Jay called 'The only distinctly blue bird of such large size.' The Field and Chipping Sparrows are noticeably *different* in form, and the Chebec is *not* 'without distinct wing-bars.' A comparison of the Scarlet Tanager's song with the Robin's, and of the Swamp Sparrow's with the Chipping's, would be of more service than the vague descriptions given, and certainly nearer the mark than the statement that the Chickadee 'has a spring song similar to that of the White-throated Sparrow.'

Besides the colored frontispiece of a dozen brightly-colored birds—pretty, but marred by the printer—there are drawings, based on life-sketches of wild birds, of 53 species, in Mr. Sawyer's usual most pleasing and spirited style, well known to the readers of Bird-Lore. They add greatly to the value and attractiveness of the book. The Flicker, however, should not have a light iris, and the Water Thrush looks rather more like a Louisiana. A Swift or two would have added to the usefulness of the plate of 'Small Sailing and Skimming Birds.'—C. H. R.

Conservation of Our Wild Birds. Methods of Attracting and Increasing the Numbers of Useful Birds and the Establishment of Sanctuaries. By Bradford A. Scudder. Issued by the Massachusetts Fish and Game Protective Association, 748 Tremont Building, Boston. 71 pages.

This publication should prove of great use to anyone interested in the subject, whether he wants to install a few bird-attracting devices in a suburban yard, or to turn a great estate into a fully equipped sanctuary. Its scope is indicated by its chapter-headings: Birds That We Should Encourage to Nest about Our Country Homes; Nesting-Boxes; Martin Houses; Bird-Baths; Winter Feeding of Birds; Berry- and Seed-Bearing Trees and Shrubs; Aquatic Plants; The Establishment of a Sanctuary; Enemies of Wild

Birds; Bibliography [very brief] of Works Pertaining to Birds and the Out-of-Doors.

Full instructions, with drawings and specifications, for the construction of bird-houses for various species, of baths and of feeding-stations are given. The list of trees and shrubs bearing natural food for birds may be consulted profitably by one with grounds of any size to plant, and the chapter on 'Aquatic Plants' is for those owning ponds which could be made attractive to wild ducks. 'The Establishment of a Sanctuary' shows how much more economical and efficient for true conservation purposes is a place kept entirely free from hunting than one where game-birds are raised by hand in large numbers only to be shot.

It is with the author's statements regarding so-called 'vermin' that we have a very serious quarrel, and we fear that, issued as they are by a 'protective' association, they will do much harm. To class so splendid a bird as the Great Horned Owl as 'vermin' is as wide of the mark as it would be to apply that term to the Chickadee. Owls, Hawks, Crows, Jays, squirrels, weasels and foxes are not vermin; they are important, interesting, beautiful, and often useful forms of wild life, whose extermination would be as sad a loss as that of the game on which to some extent they prey. A pair of majestic Great Horned Owls is certainly worth more than any toll they may take from the numbers of hyphenated, mongrel Pheasants, beautiful and desirable in reasonable numbers as the latter are, and rabbits in abundance will turn the Owls' attention, as well as the foxes', from game-birds. We should strive to preserve the natural balance between the creatures of prey and their quarry; in certain circumstances the ranks of the former must be carefully thinned, but to urge their general and systematic destruction is essentially vicious. To kill all our Sharp-shinned and Cooper's Hawks, to save the small birds they eat, would be hardly less of a crime than to allow them to multiply till they threatened seriously our small-bird population. England is held up to us as an example—a horrible example, we call it—of a country with thousands of imported Pheasants, and Red Grouse moors so overstocked that nature has to resort to disease to keep the birds in check, and where most Hawks and Owls, and the beautiful native Jay and Magpie in large areas, are almost extinct. "The Great Horned and the Barred Owl are both very destructive to bird-life, and should be shot wherever found." This sickening sentence shows an ignorance—amazing in the secretary of a state fish and game association—of the feeding-habits of the Barred Owl. This highly beneficial species has long been well known to live mainly on mice, shrews, moles, large insects, frogs, etc.; the bird portion of its diet is insignificant, and very rarely includes poultry or game. The would-be conservationist should remember that the extermination of any native creature is neither necessary nor desirable for the proper conservation of any other.—C. H. R.

The Ornithological Magazines

The Auk.—The July issue opens with 'Field Notes on Some Long Island Shore Birds,' by J. T. Nichols and F. Harper. It is a careful record of the habits of the commoner species frequenting our sand beaches and marshes, and the authors have been unusually successful in obtaining photographs of many of these birds, which most of us think of as being most restless and timid. The flight-poses are particularly instructive.

The second part of an article by J. S. Huxley on 'Bird-Watching and Biological Science' is virtually an appeal for careful note-taking of bird behavior, especially courtship, with immediate classification in a card index. The modern idea that everything is susceptible of indexing is applicable within certain bounds, but the novice would better beware of a system that may bring him in an avalanche of cards before he has learned to record his field experiences in a coherent manner. Careful ornithologists have for years past kept record of many of

the very things that Mr. Huxley would now have on cards, but naturally no single observer has opportunity for all sorts of observations.

R. C. Murphy writes on the 'Anatidæ of South Georgia,' of which there are two species—a Teal and a Goose introduced from the Falkland Islands in 1910; W. De W. Miller advocates a new classification of the Scoters into two genera, *Oidemia* and *Melanitta;* and Dr. C. W. Townsend, in 'Notes on the Eider' by Johan Beetz, believes that, because of intergradation of characters, *borealis* and *dresseri* should both be considered races of *mollissima.*

With 'Notes on the Birds of the Elk Mountain Region, Colorado,' E. R. Warren has some good photographs of the country, also of the nest of Wright's Flycatcher and of Macgillivray's Warbler. H. Mousley presents a careful study of the nesting of the Prairie Horned Lark at Hatley, Quebec.

Under the caption, 'The Type Locality of *Colaptes cafer,*' Dr. T. S. Palmer cleverly brings together published evidence to show the blunders made by early writers, by which this Flicker was described as coming from the Cape of Good Hope, when the specimen probably came from Vancouver Island.—J. D.

The Condor.—Of the seven general articles in 'The Condor' for July, three relate to birds of widely separated localities in the South—in Cuba, Texas and Arizona; two are local lists for Montana and California; and two contain technical descriptions of species. In 'Notes from the U. S. Naval Station, Guantanamo Bay, Cuba,' Dr. T. N. Richards gives an account of the birds which have come under his observation, chiefly during the winter months, and includes a description of the nest and eggs of the Grassquit (*Tiaris canora*). It is interesting to note that of the twenty species mentioned only five, the Brown Pelican, Frigate-Bird, Little Blue Heron, Zenaida Dove and Ani occur in the United States. 'Meeting Spring Half-Way' is the picturesque title adopted by Mrs. Bailey for the first part of a description of the birds found in April in Texas, chiefly in the vicinity of Texarkana, Austin, San Antonio, Corpus Christi Bay and Tule Lake. A trip in the Santa Catalina Mountains, Arizona, in May, 1904, is described by F. C. Willard, who collected eggs of Costa's Hummingbird, the Gray Vireo, Arizona Cardinal, Zone-tailed Hawk and Palmer's Thrasher.

Norman de W. Betts gives a briefly annotated list of 48 species of 'Birds seen in the Valley of the South Fork of the Flathead River, Montana' in the summer of 1915, and John G. Tyler contributes 'Migration and Field Notes from Fresno Co., Calif.,' on 18 species observed chiefly in 1914 and 1915.

The Sahuaro Screech Owl (*Otus asio gilmani*) described by Swarth a few years ago, from southern Arizona, was recently reduced to synonymy by Ridgway in his review of the Owls in 'The Birds of North and Middle America.' After a reëxamination of the question and a study of some 30 specimens Swarth concludes that the Sahuaro Owl is a recognizable race and that there are two distinct types of Screech Owls in southern Arizona, *Otus a. cineraceus* in the higher mountains and *Otus a. gilmani* in the hot lower Sonoran valleys.

Under the title, 'A New Ruffed Grouse from the Yukon Valley,' Grinnell describes *Bonasa umbellus yukonensis* from a specimen collected at Forty-mile, on the Yukon River near the Alaska boundary, on November 5, 1899, and now in the Museum of Vertebrate Zoölogy at Berkeley, Calif.

Among the brief notes should be mentioned several interesting records of the breeding of the Western Robin in or near Golden Gate Park, San Francisco, in 1915 and 1916.—T. S. P.

Bird-Lore

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Bird-Lore's Motto:
A Bird in the Bush Is Worth Two in the Hand

THE expedition of the American Museum of Natural History, of which the Editor of BIRD-LORE is a member, and concerning the work of which we wrote briefly in our last issue, sailed from Guayaquil, June 9, for Mollendo, Peru. The voyage was made in a local steamer, with frequent stops, nevertheless it gives one some conception of the extent of Peru's coast-line to know that Mollendo was not reached until June 24! It is difficult to conceive of a sea-journey on a passenger steamer which would be more interesting to a bird-student. From the time we passed Cape Parina, the most western point of South America, until we reached our destination, there was not a moment when birds were not in sight, and often they were present in such numbers that no words can convey an adequate idea of their abundance. As far as the eye could reach, the air above the water fairly twinkled with feathered forms; while a glass, like a telescope turned toward the stars, revealed unsuspected myriads beyond.

On such occasions the birds were usually feeding, and their activity, added to their numbers, greatly increased the interest and impressiveness of the scene. Pelicans dropped from the air with their reckless plunge; Gannets, like gigantic living spear-heads, shot downward; Terns darted more quickly, while immediately above the water an amazing throng of Cormorants and Gulls hunted in a less spectacular but no doubt equally effective manner.

If one marveled at the numbers of the birds, what could one think of the apparently unfailing abundance of the fish on which they were preying. Nor were these inhabitants of the deep menaced only from above. Where the birds clustered most eagerly, the water was usually broken by the heads of groups of seals which, in their pursuit of fish below, drove them within reach of the birds above.

Without considering the question of food for the fishes, we have in the combination of bird and fish, plus certain coastal islands and a rainless climate, the fundamental factors in producing the guano deposits for which the Peruvian coast is famous, and which from the days of the Incas to the present time have been matters of government concern.

Those guano islands which we passed near enough to see clearly—among others the Chinchas—were practically without birds. This was their non-breeding or mid-winter season, a fact which no doubt accounted for the general abundance of bird-life in the area through which we passed. In December they would probably have been gathered on their nesting-grounds.

Of the birds named, there was one species of Pelican, closely related to our Brown Pelican, two of Gannets, two of Terns—including the beautiful Inca Tern—four of Gulls and at least two of Cormorants, both more attractive than our black species. There were vast numbers of Tubinares, including a large Albatross, Shearwaters, and Petrels.

From Mollendo the expedition proceeded to the Urubamba Valley, where, in the interests of the National Geographic Society and Yale University, a brief survey was made of the life-zones from the cold páramo or puna to the tropics, and specimens of birds secured on which, in connection with those previously obtained by Mr. Edmund Heller, it is proposed to base a paper on the distribution of bird-life in this remarkably interesting region.—Cuzco, Peru, July 26 1916.

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the Editor, 67 Oriole Avenue, Providence, R. I.

A JUSTIFIED CRITICISM?

FROM time to time, and from more than a single source, there has come the criticism that bird-study is in danger of being over-popularized. This criticism does not imply that bird-study should be limited either in its scope or to students of mature years and serious purpose. It does imply that there are persons who care to study birds only in a superficial way, that there are others who present lectures of a merely popular and too frequently similar type, and that the somewhat confused methods of bird- and nature-study at present in use sometimes miss the point by reason of uninspired application and lack of personal initiative.

In order to weigh this criticism justly, it is well to disabuse our minds of prejudice and to examine the evidence at hand with nothing but the plain truth in view. And first, let us establish the standard, or standards, by which we are willing to abide in our conception of the true aim and content of bird-study.

Reviewing first the work of scientifically trained ornithologists, it is easy to see that it has been along lines of research, discovery, classification, and a general furtherance of knowledge with relation to birds and their environment. Such work is not of a popular nature, but it contains the material upon which popular ornithology should be based, if the latter is not to degenerate into a pastime or fad. The superficial student, interested only in the popular side of ornithology, is apt to shun the trained ornithologist's method, to balk at his standard of thoroughness, and to close the ears as well as the mind to his careful and painstaking work. This is a distinct loss to the student. To be unable to concentrate one's attention upon a simple problem which may be solved by careful observation, to feel indifferent to or afraid of what may be described as "the real thing" in nature, depending instead upon a colored or uncolored picture or some other mental prop, to lack sufficient application to use intelligently a bird-book of the grade of Chapman's or Mrs. Bailey's Handbook—these are serious drawbacks, resulting inevitably in a lowered standard and a circumscribed acquaintance with bird-life.

That too much of this kind of bird-study is going on is undoubtedly true. In so far as it awakens a love of nature and a real interest in birds, it is good; but whenever it tends to a *sentimental*, *inaccurate* and *uninspired* conception of the place of birds in nature and their value to man, it deserves the criticism of having degenerated into a study which cannot hold a secure place in our

school curriculum. There should be no mistake in understanding this distinction. If we desire to see bird- and nature-study taught in our schools, we must see to it that it is kept to a true and high standard, from the lowest grade up. It may be taught as simply as one chooses—in fact, the simplest methods are usually the best methods—but these methods should rest on a firm foundation of real knowledge, and not on a sketchy, anecdotal method patched together without any definite purpose out of scrappy, 'catchy' bits of information. Compare such books as 'The Woodpeckers' and 'The Bird Book' by Mrs. Eckstorm, or 'The Handbook of Nature-Study' by Mrs. Comstock, with some of the so-called elementary bird- and nature-books, and see how possible it is to follow a thoroughly careful, scientific method in a simple, accurate way even with children.

Reviewing, next, the lectures on birds and related subjects which have been subjected to the criticism of being over-popularized, let us take one backward glance, to see what has been the occasion for such lectures. Until the Audubon Society was formed, and the Division of Biological Survey established, the public, with the exception of trained students, knew as little about the habits and activities of birds, probably, as it did about the forms of deep-sea life. Now and then a born observer, a true nature-lover, gleaned some fact of interest or noted some unobserved phase of behavior with reference to birds; but, in general, great ignorance about this subject was everywhere so common as to be unperceived.

These conditions at first demanded lectures of a more or less popular nature, to present to and impress upon the mind of a thoughtless and indifferent public the facts of the alarming and needless destruction of bird-life, then at its height. Through these lectures or talks, whether circulated in print or by word of mouth, a certain kind of necessary information was made current.

After this earlier critical period followed one which has been described as more strictly educational, based upon an ever enlarging acquaintance with bird-life. Readers of *The Auk*, *Bird-Lore*, *The Wilson Bulletin* and *The Condor* in this country, and of equally comprehensive foreign ornithological publications, have kept abreast of the thorough and rational study of birds conducted at widely varying points, with reference to many phases of bird-life. Some of the lectures now available to the public present notable facts gleaned from these latter sources; but certain ones deal mainly with statistics of a former day which, although striking and well worth every one's consideration, have become a kind of ornithological cant through repetition. In addition to this drawback, some of these lectures are evidently put together with the idea that an audience must be entertained or cajoled into listening to a talk upon birds. These are the lectures which offer stones in place of bread. It is not necessary either to reiterate statistics which had their most immediate application at a time when the terms economic ornithology and conservation of natural resources were not generally understood, or, to assume that the subject of bird-

study and bird-protection must be dealt with by the sugar-coated-pill method.

Birds and their natural inter-relationships with other forms of life present an unlimited and fascinating field for investigation. Even their artificial or so-called economic relationship to man is a subject full of interesting, unusual, and important problems. There is, too, a dignity as well as charm about the study of nature, which should always be borne in mind. No one has expressed this more truly than Audubon, writing in his journal one July morning on the bleak coast of Labrador. Impressed by the desolate grandeur of the unaccustomed scene, he was able to visualize most sensitively the charm of Nature:

"All, all is wonderfully wild and grand, ay, terrific. And yet how beautiful it is now, when your eye sees the wild bee, moving from one flower to another in search of food, which doubtless is as sweet to her as the essence of the orange and the magnolia is to her more favoured sister in Louisiana. The little ring-plover rearing its delicate and tender young; the eider duck swimming man-of-war-like amid her floating brood, like the guard-ship of a most valuable convoy; the white-crowned bunting's sonorous note reaching your ears ever and anon; the crowds of sea-birds in search of places wherein to repose or to feed. I say how beautiful all this, in this wonderful rocky desert at this season . . . "

There are lecturers who present the study of birds and nature *only from the point of view of truth and beauty*, and by reason of this they do not sacrifice the dignity of the theme in a mistaken effort to please. These are the lectures we need and should endeavor to encourage. With such a wealth of material always at hand, if one will merely open his eyes or ears to observe, it is hardly necessary to waste the time or patience of an audience reciting familiar examples and overworked statistics, or rambling through an ill-assorted, fragmentary mass of anecdotes. Huxley was an ideal teacher and an equally ideal popular lecturer. We need to strive for his high standard of presenting truth and only the truth, with some definite purpose or principle as a basis, whether in the school-room or on the lecture platform. The method of presentation can hardly fail to be attractive if one shows sufficient endeavor to have at his command illustrative material from personal observation, and sufficient enthusiasm to be convincing.

Audubon societies are constantly engaging lecturers to acquaint the public with birds, and as constantly assisting teachers and pupils. There is a ready demand for both of these forms of work. The thing which will help most is to raise the standard both of the lectures and of the work in schools. Seek out those lecturers who really have something to say, with or without lantern-slides. Select wisely those books and aids which are *above*, rather than below or merely up to the average, and recommend them to teachers and also to public librarians.

Some books, lectures and aids which come to mind as being particularly helpful are the following:

Huxley: A Piece of Chalk (lecture to English Workingmen, a model for a popular talk).

Forbush, E. H.: Shore- and Water-Birds Seen Along the Coast of New England in July (a description of various tours of investigation along the coast and neighboring islands of New England, illustrated with slides).

Murphy, R. C.: Some Problems of Antarctic Bird-Life (a presentation of data gathered in the South Atlantic on an expedition to South Georgia, with reference to specific problems of distribution, habits, and abundance, illustrated with slides).

Lowell, J. R.: My Garden Acquaintance.

Burroughs: Birds and Bees.

Thoreau: Camping in the Maine Woods.

The Succession of Forest Trees and Wild Apples.

Finley: Little Bird Blue.

Mills: The Story of a Thousand-Year Pine.

Simple outlines of study devoted to a correlated treatment of birds, vegetation, and insects.

School-room charts of limited areas made by the pupils, to show the character and abundance of bird-life around the building, the placing of feeding-counters, nesting-boxes, and drinking-fountains, with a tabulated record of the birds visiting each.

A collection of common weed-seeds made by the pupils.

A collection of insects made by the pupils.

Many other books and lectures might be mentioned, of great value and interest. It is well to form the habit of 'discovering' a new lecture, book, or leaflet each month. —A. H. W.

JUNIOR AUDUBON WORK

For Teachers and Pupils

Exercise XXIX: Correlated with Joy and Knowledge.

"To traverse the paths day by day, and week by week; to keep an eye ever on the fields from year's end to year's end, is the one only method of knowing what really is in, or comes to them. . . . The richest locality may be apparently devoid of interest just at the juncture of a chance visit."—From "Nature Near London," by Richard Jeffries.

"Mr. Thoreau dedicated his genius with such entire love to the fields, hills and waters of his native town that he made them known and interesting to all reading Americans, and to people over the sea. . . . One of the weapons he used, more important than microscope or alcohol-receiver to other investigators, was a whim which grew on him by indulgence, yet appeared in gravest statement, namely, of extolling his own town and neighborhood as the most favored center for natural observation. He remarked that the flora of Massachusetts embraced almost all the important plants of America—most of the oaks, most of the willows, the best pines, the ash, the maple, the beech, the nuts. . . ."

"The other weapon with which he conquered all obstacles in science was patience. He knew how to sit immovable—a part of the rock he rested on—until the bird, the reptile, the fish, which had retired from him, should come back and resume its habits—nay, moved by curiosity, should come to him and watch him."

"It was a pleasure and a privilege to walk with him. He knew the country like a fox or a bird, and passed through it as freely by paths of his own. He knew every track in the snow or on the ground, and what creature had taken this path before him. . . . His power of observation seemed to indicate additional senses. He saw as with a microscope, heard as with ear-trumpet, and his mind was a photographic register of all he saw and heard. And yet none knew better than he that it is not the fact that imports, but the impression or effect of the fact on your mind. Every fact lay in glory in his mind, a type of the order and beauty of the whole."—Excerpt from 'Biographical Sketch of Thoreau' by Ralph Waldo Emerson.

"July 9. The wind east, wet, disagreeable, and foggy. This is the most wonderful climate in the world; the thermometer 52°, mosquitoes in profusion, plants blooming by millions, and at every step you tread on flowers such as would be looked on in more temperate climates with pleasure. I only wish I could describe plants as well as I can the habits of birds. I have drawn all day on the Loon, a most difficult bird to imitate." —Excerpt from 'The Life of Audubon,' describing a summer in Labrador.

"However valuable information may be, it can hardly be regarded as a substitute for knowledge. Information is always at least second-hand, while knowledge is first-hand. . . . If the study of nature is conducted so as to cultivate chiefly a sentimental appreciation of natural objects, it is merely *more* of the *same thing*. If it is conducted so as to store the memory chiefly with encyclopædic information, it misses the high level of its educational opportunity. . . . Constantly the teacher is confronted by the question of choice between emphasis on principles and emphasis on details. A guiding principle is needed. . . . mainly, the secret of education is the touching of a 'hidden spring,' and we venture that you are more likely to touch it through effective presentation of great principles than through details. Once youth has *found itself*, then the details will take care of themselves."—Excerpts from 'The School Science Series,' Jan. 1915.

"This book tells of some of the interesting things that I have found out with Nature. If you like it, I hope that you will sometime tell me of many things that you may discover for yourselves."—From the Introduction to 'The Story of a Thousand-Year Pine,' by Enos A. Mills.

THE INNER HARBOR

The 'inner harbor' at low tide is a world by itself. At first sight, strangers are impressed only by its salt, rank odor; but, let the tide come in, and they marvel at its beauty. The birds and I wait for the tide's ebb and flow with eager constancy. Twice every twenty-four hours this wonderful phenomenon takes place, covering and uncovering a rich feeding-area for the birds and an equally rich area of observation for me.

One never knows exactly what may happen on the inner harbor at low tide. It is true that the Green Herons and Black-crowned Night Herons come to feed with remarkable regularity; Kingfishers fly in from adjoining lakes, and a small company of Fish Crows, with an ever watchful band of American Crows, pay daily visits to the tasty tidal flats, while the Barn Swallows skim hither and yon, gathering large mouthfuls of food for their nestlings, hidden nearby under an old bath-house and the porch of a seaside laboratory. Now

and then a Spotted Sandpiper flies by, too, from the beach shore of the sand-spit, up through the "transition-marsh," I suspect, to the artificial fresh-water lakes beyond. Or perhaps it is the other way. In all the summers that I have watched the inner harbor, I am not really sure on this point. It is always a delight to watch the Herons come in to feed, to learn their different actions in flight, to study their poses as they stand immovable, waiting the opportune instant to strike for prey or stalk stealthily over the yielding, muddy ooze. Very rarely they call during the day, though occasionally I hear the little Green Heron's *ke-cuk*, or the hoarser *quawk* of its larger companion.

At night, the latter calls more frequently, and though I cannot look through the darkness a stone's-throw to the harbor, I know who is there, when the tide is out.

To-day was one of many red-letter days at low tide. In addition to the Crows and Herons, Kingfishers three and the restless Sandpiper, a Great Blue Heron came in, with Gulls and Terns and a strange Duck. It was so exciting that I could pay little attention to a parent Starling, whose nestlings, tucked away in a crevice of the old building behind me, made unceasing demands upon its distracted attention. The Terns hardly made the circuit of the harbor, so brief was their stay, before returning to the larger waters of the outer harbor and sound. It was fortunate I was on the lookout. The big Herring Gulls had been in almost daily for some weeks, sometimes one in nearly adult plumage, sometimes others in dark immature plumage, but this was the first day of the season that the Laughing Gulls swept in from the outer waters. Their airy evolutions in which they show to such fine advantage the black primaries of their slender wings, caught my eye, and though nearly all of the little flock were immature, two black heads were visible, and all showed a dark or blackish bill. One could hardly wish for better fortune than to see these two species of Gulls sitting side by side on the weedy flats seldom feeding, however, although once a Herring Gull seized and bore off a wriggling eel, followed by a greedy Night Heron. It may be the harbor at low tide offers a recreation-ground for them, or an attractive place of rest, for they seem to like to swim slowly about in shallow water, now and then splashing the water over themselves and preening, but best of all, to squat quietly on the flats of water-weed exposed by the ebb-tide.

The Great Blue Heron has been an unusual visitor for days this season, causing much speculation as to whether it is a stray, or a breeding-bird, rare as a summer resident in this locality.

One could scarcely tire of watching this graceful Heron, slender of neck and leg, now wading breast-deep in the incoming tide, now standing motionless with fixed eye and ready bill, turning occasionally, and instantly, as if by magic, disappearing from sight, so perfectly does it blend into the colorless air and current.

The Duck which happened in, this memorable day, kept paddling well

off shore, presenting a puzzling exterior. Although of scaup-like build, it had a peculiarly bright rusty appearance on the sides and back, which, streaked with white, at once caught the eye of the observer. Was it a female Greater Scaup—I cannot think so—or, perhaps, a female Wood Duck? The question must be settled, I suspect, in a museum where its duplicate may be found, although, if I wait the chance, I may sometimes see its like again with more assurance of its identity. It is rather tantalizing, and yet it adds to the interest of the harbor, to have an unidentified species appear there. Once an immature Little Blue Heron strayed in from the far South. What an eventful time it was! An immature Bald Eagle flew over the harbor too, when the timely presence of an expert ornithologist left no doubt as to its identity. Often an Osprey visits the inner harbor, sometimes with a mate. It is not far from the locality of the harbor, as a Crow flies, to the secluded breeding-refuge of the Osprey on Gardiner's Island. It is quite possible that a pair may breed nearby, as was true years ago, before the State Fish Hatchery protected its young fry by trapping or shooting the Kingfishers, Green Herons, and occasional Ospreys which visited the artificial lagoons where the fish are reared.

Sometimes I feel that wonders never cease. Even at this moment, a Turkey Buzzard flew by, the first of its kind perhaps ever recorded at this particular point. One must be vigilant to keep up with the feathered visitors to the harbor. It is not a large harbor, but it seems very spacious when the tide goes out and twenty or more Herons steal in, each to a favored location, and Gulls, Swallows, Crows, and Terns keep coming and going.

One longs for eyes on all sides, to watch exactly what is happening, for no single pair can follow the movements of all these birds at once. It must be a glance here and a glance there, with a frequent steady survey of the entire harbor through stereo-binoculars. Every summer I wish I might devote my entire time to the harbor at low tide, and at high tide too, for that matter. Perhaps then it would be possible to really know all that goes on. As the tide comes in, the Herons fly to adjoining woodland, to roost on favored trees, not all at a time, usually singly, though sometimes in straggling groups.

The Green Herons seem to time their period of feeding somewhat differently from the other Herons, while the Crows, who are easily alarmed, doubtless find a part of their daily ration elsewhere. There is so very much that I have not seen yet, even after twelve summers, that I look upon the inner harbor still, as an almost unexplored territory.

In thinking about your areas of observation, and each of you has some such place, even in the largest city, if you will search and find it, it seems to me you would do well to choose a few birds to study closely this year. You can hardly hope to learn all there is to know about them, but you can at least make a more intimate acquaintance with them than you could if you tried to study many different species of birds. I would suggest that you first select an area where you can make daily observations without going to a great distance, and, having

selected such a vantage-place, that you choose four birds for close study and keep daily records of what you learn about them. I think the Robin, English Sparrow, Crow, and Downy Woodpecker might be a very profitable group to study. Will you try to answer the following questions so far as possible from your own observations?

1. How many relatives, *belonging to the same family*, of each of these species, can you name?

2. Which bird has the largest number of relatives? Which the fewest?

3. What food do these birds chiefly eat during the fall? Is it the same kind of food that they eat at other seasons of the year?

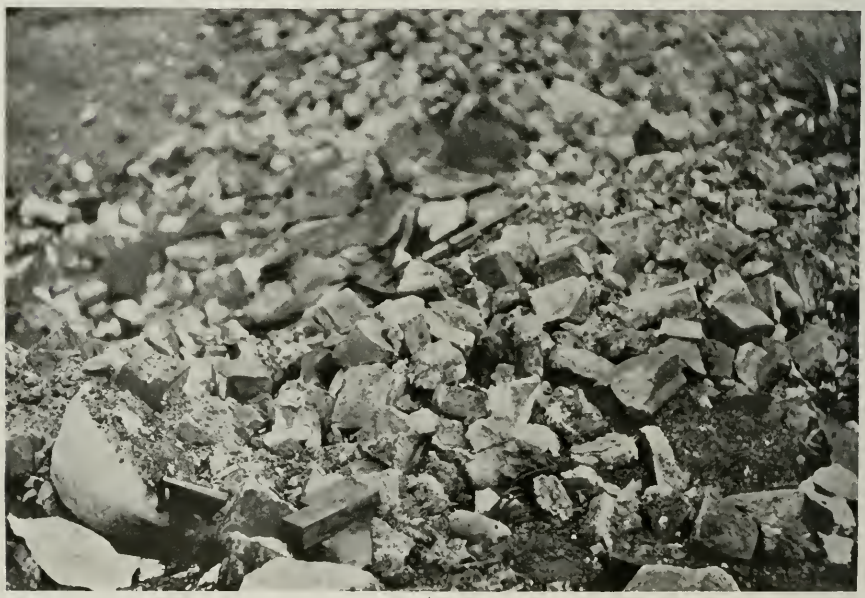
4. Will they all remain after cold weather sets in?

5. Where do they spend the night? In the same places as at other times of the year?

6. Are they sociable or solitary in their habits?

If you set about discovering the answers to these questions gladly and with a desire to find out all you can by *using your own eyes*, you will have learned Thoreau's secret and Audubon's secret, and part of the birds' secrets.

A. H. W.



MRS. NIGHTHAWK IS DOWN NEAR THE LOWER EDGE OF THIS PICTURE. HER TWO BABIES SHOW JUST IN FRONT OF HER BREAST. IT WAS VERY HOT, AND I THINK SHE KEPT THEM THERE BECAUSE IT WAS COOLER.

FOR AND FROM ADULT AND YOUNG OBSERVERS

VIREO

Vireo, Vireo,
Where do you go
When the summer's done
And the winter's begun?
Where do you go,
Vireo, Vireo?

Vireo, Vireo,
Where do you go?
Do you wander all night,
With no shelter in sight?
Where do you go,
Vireo, Vireo?

—Doris E. Fernald (Age 10 years), *Jackson, N. H.*

THIS PICTURE MAKES HER LOOK SMALLER THAN SHE ACTUALLY IS

A MOTHER NIGHTHAWK AND HER NESTLINGS

I have spent a great many summer evenings watching the Nighthawks in their erratic flights for insects, and listening to their loud nasal *peent* and the booming sound said to be the rush of air through their wings. When they came down low enough for me to distinguish the large white spot on each wing, their broad wing-spread made them look like such large birds that I often wished I might see them at close range. This last summer of 1915, my wish was gratified. A friend told me of the nesting-place of the bird, and I quickly availed myself of the opportunity of visiting it. A stranger place could not be imagined for a wild bird's nest. On the ground on some waste

brick and mortar, not more than forty feet from the 'round-house' of the B. & M. R. R. car-shops, and not over eighty-five feet from the railroad track, sat Madam Nighthawk with her two babies cuddled under her wings, so like her surroundings in color that I stood and searched for her with my eyes two or three moments. The men at the shops had known about her for some time. She had become so accustomed to their visits that she would allow them to come close to the nest, and even to touch her. At the time of my first visit, the male bird coasted high overhead in the sky, occasionally swooping down to the nest, as if to assure himself that all was well there. On my second visit, I took along a friend who made six pictures for me.

Before taking the last picture, I gently insisted upon making the mother bird rise from the nest, which she did, lifting her long wings over her back and seeming to pose for us. It was quite an exciting experience for me, and I found the men around the shops as interested as I was. The night-watchman said: "It would go hard with anyone who tried to molest her."

We saw an American Osprey on the meadow below our house, last week. I did not know it stayed here through the winter. Perhaps this was a belated one going south. We still hear and see the Meadowlarks every spring.—Mrs. H. L. Parker, *Lyndonville, Vermont.*

[The Osprey winters from southern United States as far as Paraguay.—A. H. W.]

SOME BIRDS OF CANADA

I live in Canada, but I have come to spend the winter in Iowa. I am going to tell you about some of the birds in Canada. On a farm where I live, there is a place dug out which is something like a very small lake. In this little lake many birds come to drink the water and to bathe. It is out on the prairie, and there are not many Robins. Some of the birds that come are the Purple Martin, the Goldfinch, the Meadowlark, and the Blackbird.

As nearly everyone knows, the Cowbird does not build a nest, but uses the nests of other birds. One day a boy brought a nest to school. The Cowbird had built another floor over the bottom of it and laid its eggs in it.—Mary Dorothy Davis (Age 9 years), *Mt. Vernon, Iowa.*

[Is the writer sure that the Cowbird was the bird which built a 'floor' over the bottom of the nest observed? From what is known of the Cowbird's habits, it is more likely to lay its eggs in another bird's nest, causing the owner in some instances to build a second bottom to the nest over the intruder's eggs. Perhaps, upon further investigation, it may be found that down on the first 'floor' of this nest is a set of eggs containing one or more of the Cowbird's among the number. If so, the unfortunate builder probably tried to right the difficulty by putting in the extra bottom, only to be again molested by its persecutor. Notice hereafter, when watching birds, which ones associate with the Cowbird. The fact that birds of different habit are found associated at a common drinking- and bathing-place is worthy of notice.—A. H. W.]

SHE IS LIFTING HER WINGS IN THIS PICTURE

THIS IS THE BEST PICTURE OF HER. FIND HER IN THE CENTER OF THE PICTURE AT THE RIGHT

A STORY OF A QUAIL

I am eleven years old and am in the fourth grade. I belong to the Junior Audubon Society. I have a story to write which I think is very interesting.

Once last summer my mother and my brother and I went out to the woods where some berries grew. My mother looked down on the ground and saw a Quail sitting on its nest. It flew a little way off. I looked at the eggs and counted them and there were sixteen.

In three days we went there again, and the little Quails were hatched. As soon as they saw us, they went into a bush and began to sing a little squeaky song.—Elouise Verba (Age 11 years), *Mt. Vernon, Iowa.*

[The 'little squeaky song' of the baby Quails was probably a series of alarm-notes. Birds, like human beings, often express different emotions by different sounds. Very many birds which do not sing a true song have a variety of call-notes. The notes of the Quail, or Bob-white, are particularly pleasing. In addition to the musical 'Bob-white' call with which most observers are familiar, this species gives in the fall of the year 'scatter-calls,' when a bevy has been disturbed and separated. By means of these, the different birds of the flock find each other again. If frightened or excited, they also make rapid twittering notes, which may have been what the observer in Mt. Vernon heard.—A. H. W.]

BIRD-NOTES

The Friends' Germantown School has lately joined the Audubon Society. The accompanying picture shows some younger members. Every child in the school has made a bird-box. Some of these are for House Wrens, some for

SOME OF THE YOUNGER MEMBERS OF THE AUDUBON SOCIETY

The bird-boxes were made by the children

Bluebirds, and others for Purple Martins. There were several squirrel-boxes made, five feeding-stations, and a bird-bath for the schoolyard.

The bird-bath is about 3½ feet high. It is made from cedar bark. The basin is 14 inches in diameter.

On May 20 we found a dead Canadian Warbler. Others were seen after that. We looked in a bird-book about Warblers, and found there that the Canadian Warbler answered the description of this bird. We hope to see some drinking from our bird-bath when they are journeying past.

The fifth and sixth grades have been watching young birds, especially Robins and Flickers, learning to fly. It reminds you of Phoebe Cary's poem 'Don't Give Up.'

Two bird-charts have been made. On one we pasted the pictures of the birds as we saw them. Cardinals, Cedar Waxwings, Wrens, Robins, Blue Jays, Warblers, and others were seen. The other chart is made up of three lists, one for the date, one for the name of the finder, and one for the name of the bird. They are now at the Civic Exposition in Philadelphia.—MARGARET PUSEY (Age 10 years), Sixth Grade.

[It is especially interesting to hear of charts being made in sixth-grade work. It is not only valuable to have charts to place on exhibit, but also to keep in the schoolroom for comparison from year to year. The main difficulty with much of our bird-work, both elementary and advanced, is that observers are not willing to go to the trouble of keeping careful records of what they see and hear. Form the habit early of setting down in clear, accurate form a record of all that is seen or heard in the field. Sometime you will have a set of records of great value to which others as well as yourself can refer.—A. H.W.]

THE ENGLISH SPARROW

As everyone always seems to be running down the English Sparrow, I think it is time somebody said some nice things of it.

Let us first consider the fact that if this bird had not been very much needed by us it never would have been imported here. This took place in Brooklyn, New York, in 1851–1852.

The English Sparrow rears its young by the half-dozen in all sorts of places. It does not make any difference to it whether it has a palace or a shed for its home, and it always makes the best of it even if it is a shed, and this shows that it is not a fault finding bird but is happy and satisfied in any surroundings.

Although I will have to admit that it does a great deal of damage by eating so much grain, it overbalances this by eating millions of ants' eggs and killing large quantities of insects.

Although it does not sing as sweetly as the Song Sparrow, it certainly is a pleasure to watch a flock of English Sparrows in winter, when our other bird friends have left us, and the ground is covered with ice and snow.

I think we should all admire the bravery of these little feathered folk, for

just think of the enemies they have! People hate them and chase them away from their homes, boys throw stones at them and shoot them, and cats are always waiting to make a nice meal of them. In spite of all this, they stand their ground and chatter away and let all the world know what a brave race they are. Mrs. Sparrow's husband is always good to her, and if anything should ever happen to her, he will take the best of care of the nest and young.

Mr. and Mrs. Sparrow are always well dressed and choose very plain colors for their clothes, and I think this shows that they are very sensible.

I have tamed these Sparrows and found them very good friends, and not a bit of trouble. Now they bring their children to my window-sill to be fed bread, and it certainly is a pretty sight to see them.

I hope the people who are always finding fault with these little folk will take the time to learn some of their good points, and then I feel quite sure they will have more friends in the future.—Mary Kouwenhoven, *Brooklyn, New York.*

[This contribution combines two points of view, one to be commended, the other to be discouraged. The point of view of observing the English Sparrow, particularly in cities where few other species of birds make a home, and of studying or taming it, is commendable. Much can be learned in this way about the cycle of activities which make up the complex life of a bird. In fact, anyone who has the opportunity to watch only the English Sparrow need not say that it is not worth while to take up bird-study, because one species thoroughly studied gives better results than twenty species known indifferently and observed occasionally.

The point of view to be discouraged is that of attempting to read into the life, habits, or appearance of any bird a sentimental or misapplied interpretation based upon human experience. It is incorrect to say that a bird 'chooses' the colors of its plumage, whether these be gay or somber. It is not strictly true that any bird knows the difference between a 'palace' and a 'shed.' What it may know, if it has any well-developed instinct at the nesting-season, is the difference between a safe and an unsafe nesting-site. A palace is as good as a shed or a shed as a palace, provided it offers a safe site for the nest. It is not accurate to state that the English Sparrow was needed in this country because it was imported, or that it overbalances the damage it does by beneficial food-habits. So far as is known, this Sparrow did far more harm than good for many years after its reckless importation. It has now reached its maximum increase, probably in this country, at least it is hoped so. Some observers send in occasional reports of noticing that it has developed locally beneficial food-habits at certain seasons of the year, but such observations are not frequent. There is much that we need to learn about this species, as well as about the Starling, so that the study of both should be everywhere encouraged. By means of accurate and widespread observations, a solution to the unfortunate situation which now confronts us in this country, of allowing two introduced species to harass and drive out our native birds, may be found.—A. H. W.]

A PIGEON KILLS A SPARROW

There was a pair of Sparrows in my pigeon coop since March 15, 1916. Two pairs of Pigeons had little ones and one pair had eggs, and the Sparrow had a little nest. On March 20, the Pigeon with eggs killed the Sparrow. The Pigeon hit him with his wings three times, and then pecked him on the

head till he died. At night the other Sparrow came in and was looking for her mate.—Joseph O'Hanley (Age 13 years), *Plainview, L. I., N. Y.*

[Evidently the Pigeon detected the presence of an undesirable intruder and dealt with it accordingly. Whether the Pigeon would have been equally savage with any of our native birds, had one chanced to nest too near, it would be interesting to note. —A. H. W.]

JENNY WREN

About two years ago, Jenny Wren and her mate made a little home in our washroom. They made it in a crack above the door. There no saucy little Sparrow could bother them. One day I tried to look into their little house, but could not climb so high. Mr. Wren sang all day long, *warble, warble.* —Frances Forest (Age 10 years), *Mt Vernon, Iowa.*

[Had 'Jenny Wren' built in a crack outside instead of inside, the English Sparrow might have ousted her. How many nesting-sites of Wrens can you find that are now used by English Sparrows?—A. H. W.]

PROGRAM OF THE BIRD SOCIETY

THE CROW

1. *In Winter.*—George Fillinger, Murvin Dank, Howard Schmidt.
2. *Great Roosts.*—Virginia Powell, Helen Gifford.
3. *Killing a Comrade.*—Edward Harbough, Ida Mae Goldrick, Chet Horton.
4. *Nests and Eggs.*—Mildred Robertson.
5. *His Foes.*—Roland Froxell.
6. *His Smartness.*—Louise Anderson.
7. *Insect Food.*—Violet Aitkens.
8. *A Scavenger.*—Carl Quanz.
9. Harold Reeder and James Dumfree will tell the story of a ride on their wheels to see the birds.
10. *Songs and Calls of Our Native Birds.* —Victrola Records of Charles Kellogg and Charles Gorst.

—Augusta Cary Thompson, The Hodge School, *Cleveland, Ohio.*

[Programs of this kind are always of use to other schools, and are welcomed in this department. Has any one a good bird-play to contribute?—A. H. W.]

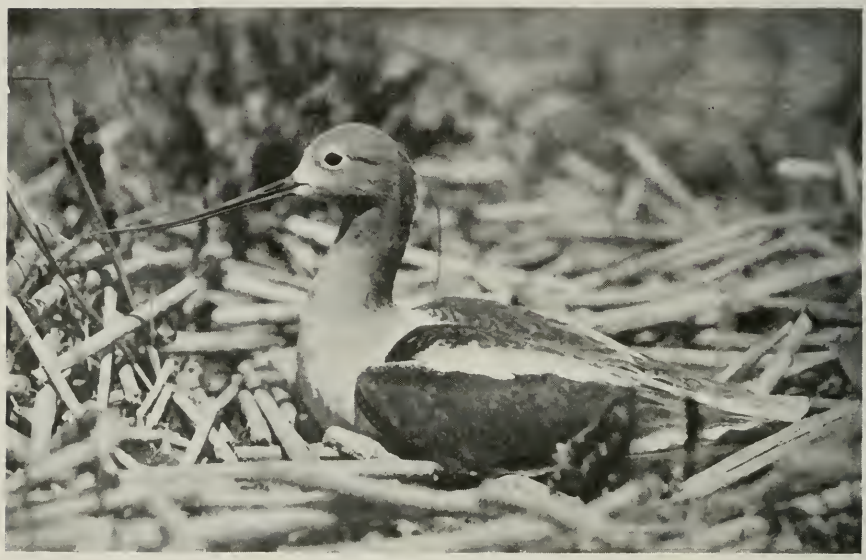
REPLY TO A LETTER FROM TEXAS

In reply to a letter from Mrs. Rose M. Hall, Texas, asking for information about bird-books including the birds of that state, the following are suggested: Chapman's 'Color Key to North American Birds'; Mrs. Florence Merriam Bailey's 'Handbook of Birds of Western North America,' and Cassin's 'Illustrations of the Birds of California, Texas, Oregon, British and Russian America.' The latter work was published in 1856, and is accessible only in large libraries or in private libraries, as a rule. A marked list of the educational leaflets of The National Association of Audubon Societies may be had by applying to 1974 Broadway, New York City. State clearly in the application that only leaflets dealing with Texas birds are desired. All letters asking for information or requiring a reply should have the applicant's name and full address plainly written on an inside sheet.—A. H. W.

THE AVOCET

By T. GILBERT PEARSON

The National Association of Audubon Societies
EDUCATIONAL LEAFLET NO. 88



AN AVOCET ON ITS NEST
Photographed by H. T. Bohlman and W. L. Finley

Among the American shore-birds the one that stands out as the most showy of them all is the Avocet. It is indeed of most striking appearance. Its white body and black, white-striped wings render it conspicuous at a great distance, and its large size has made it a coveted target for the gunners ever since the time when white hunters in America first began to go afield.

From the point of its bill to the end of its tail the Avocet measures 16 to 18 inches, and when the wings are spread the distance from tip to tip is fully 20 inches. The long, upward-curving bill is a form extremely unusual among birds; and the partly webbed feet enable it to swim with ease when, in searching for its food, it advances into water where the bottom is beyond the reach of its long legs. The color of its feet and legs explains the name 'Blue Shanks' by which it is known to many sportsmen.

While searching for wild Ducks' nests in the marshes of the Klamath River, in southern Oregon, in company with William L. Finley and R. Bruce Horsfall, we came upon several groups of these magnificent birds. In every case they were probably nesting in the neighborhood, for by their actions they plainly expressed their displeasure at our approach. At first two or three

AVOCET

Order—LIMICOLÆ
Genus—RECURVIROSTRA
Family—RECURVIROSTRIDÆ
Species—AMERICANA

National Association of Audubon Societies

would be seen, but their cries soon brought others—perhaps their mates—who left their nests to come and help expel the intruders. With shouts of distress they circled us, or flew about in the air overhead, and occasionally would alight and go bumping along the ground as though injured and undergoing the most frightful suffering. Sometimes they would settle in the water, where their antics of head-bobbing and wing-waving were most amusing. Again they would submerge the body, and, with the head laid out on the surface, would propel themselves forward much as wounded Wild Geese will sometimes do.

It was not given to us to find their nests that day nor the next, but shortly afterward several were discovered by Mr. Finley in this neighborhood.

The nest of the Avocet is merely a slight depression in the marsh lined with grass; there the spotted and blotched eggs are laid, and the young first see the light of day. In common with other waders, the little Avocets have the power of running about and picking up food very shortly after they are hatched.

I have had the good fortune of observing these birds about many of the lakes of the Plains, and in the mountain-valleys of the far West, and everywhere they have displayed the same solicitude when one approaches the neighborhood of their nests.

It is rather remarkable that so little has heretofore been written regarding the habits of Avocets, and it is evident that few ornithologists have studied them carefully since the days of John James Audubon. Here is a quotation from Audubon's "The Birds of North America," which not only gives some intimate details of the Avocet's life about the nest, but well illustrates the painstaking care with which this great artist-naturalist pursued his field-studies. His story deals with the movements of a little company of Avocets that he found breeding in a marsh about two miles from Vincennes, Indiana, in the early part of the last century.

"On alighting, whether on the water or on the ground, the American Avocet keeps its wings raised until it has fairly settled. If in the water, it stands a few minutes balancing its head and neck, somewhat in the manner of the Tell-tale Godwit. After this it stalks about searching for food, or runs after it, sometimes swimming for a yard or so while passing from one shallow to another, or wading up to its body, with the wings partially raised. Sometimes they would enter among the rushes and disappear for several minutes. They kept apart, but crossed each other's path in hundreds of ways, all perfectly silent, and without showing the least symptom of enmity toward each other, although whenever a Sandpiper came near, they would instantly give chase to it.

"On several occasions, when I purposely sent forth a loud shrill whistle without stirring, they would suddenly cease from their rambling, raise up their body and neck, emit each two or three notes, and remain several minutes on the alert, after which they would fly to their nests, and then return. They search for food precisely in the manner of the Roseate Spoonbill, moving

their heads to and fro sideways, while their bill is passing through the soft mud; and in many instances, when the water was deeper, they would immerse their whole head and a portion of the neck, as the Spoonbill and Red-breasted Snipe are wont to do. When, on the contrary, they pursued aquatic insects, such as swim on the surface, they ran after them, and, on getting up to them, suddenly seized them by thrusting the lower mandible beneath them, while the other was raised a good way above the surface, much in the manner of the Black Shear-water [Black Skimmer], which, however, performs this act on wing. They were also expert at catching flying insects, after which they ran with partially expanded wings.

NEST AND EGGS OF THE AVOCET
Photographed by H. T. Bohlman and W. L. Finley

"I watched them as they were thus engaged about an hour, when they all flew to the islets where the females were, emitting louder notes than usual. The different pairs seemed to congratulate each other, using various curious gestures; and presently those which had been sitting left the task to their mates and betook themselves to the water, when they washed, shook their wings and tail, as if either heated, or tormented by insects, and then proceeded to search for food in the manner above described. Now, reader, wait a few moments until I eat my humble breakfast."

It is worth noting that the Avocets described by Audubon had their summer home in Indiana. In the early part of the nineteenth century the species was more or less common along the Atlantic coast. Alexander Wilson, the ornithologist, found them breeding on the salt marshes of New Jersey, and perhaps southward.

In examining the published lists of birds for the various states east of the Mississippi, it is quite common today to find mention made of these birds as

a "rare transient" or an "occasional visitor." Probably few, if any, are today found breeding east of the Mississippi; the state of Illinois, perhaps, being the single exception. Their almost total disappearance from the eastern United States may be attributable entirely to the continuous onslaught which has been made on their ranks by gunners engaged in the shooting of shore-birds. There are still many Avocets in the far western states, and they have been known to breed in Texas. Apparently they do not breed farther north than Saskatchewan. In winter they may be met with along the Gulf Coast of the United States and on marshy lands to the southward.

As an economic agent in destroying injurious insects or the seeds of troublesome weeds, the Avocet cannot be rated high, for it gets its living in or about the water, feeding on such small forms of life as are there obtainable. It is known to eat small snails and water-insects, both in the adult and larval stages. On salty marshes it collects many worms from the muddy water through which it wades. On the other hand no one, apparently, has ever gone so far as to say that the Avocet is injurious to any of man's interests. It is deplorable, therefore, that the lakes and waterways of the East should now be deprived of this great wader.

Only a few weeks ago I was impressed anew with the beauty of these birds. While passing down the valley of Cane Creek, in southeastern Oregon, a flock of about fifty Avocets arose and indulged in a series of evolutions which even the most casual observer would have paused to watch. In a fairly compact company they flew away for a short distance, then turned, and, after coming back almost to the starting-point, dived toward the earth, arose again perhaps 50 yards in the air, then swung around and came back. These maneuvers were repeated at least three times. Their white-and-black plumage, flashing against the gray sage-brush of the desert mountain-side, and sharply relieved as they skimmed over the alkaline creek, made a picture long to be remembered.

Fortunately for the species, and also for us, the regulations under the Federal Migratory Bird Law now prohibit killing the Avocet. This is but one of the many wise provisions under the new government statute; and there is every reason to believe that the enactment of this law bespeaks a brighter day for the Avocet, as well as for many other species of shore-birds that in the past have been sorely persecuted.

The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, Secretary

Address all correspondence, and send all remittances for dues and contributions, to the National Association of Audubon Societies, 1974 Broadway, New York City.

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FREDERIC A. LUCAS, *Acting President* — T. GILBERT PEARSON, *Secretary*
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Any person, club, school or company in sympathy with the objects of this Association may become a member of it, and all are welcome.

Classes of Membership in the National Association of Audubon Societies for the Protection of Wild Birds and Animals:

$5 annually pays for a Sustaining Membership
$100 paid at one time constitutes a Life Membership
$1,000 constitutes a person a Patron
$5,000 constitutes a person a Founder
$25,000 constitutes a person a Benefactor

FORM OF BEQUEST:—I do hereby give and bequeath to the National Association of Audubon Societies for the Protection of Wild Birds and Animals (Incorporated), of the City of New York.

THE TREATY WINS

The treaty between the United States and Canada for the protection of migratory wild birds was ratified by the United States Senate on August 29, 1916, after having been signed on August 16, 1916, by Robert Lansing, Secretary of State, and Cecil Spring Rice, the British Ambassador. This, it is believed, is the first treaty dealing with the fortunes of birds that has ever been consummated. It covers the principle of the McLean Federal Migratory Bird Law, and its accomplishment was brought about after two years of continuous effort on the part of the bird-conservationists in this country and in Canada. Its final ratification by the Senate was made possible in part by the united labors of bird-lovers and sportsmen, but more particularly by the earnest and tactful efforts of Senator George P. McLean, of Connecticut, who, as all men know, is America's great bird-friend in the United States Senate. There yet remains the formality of sending the treaty to England for ratification by the king, and its return for exchange of ratifications. Congress will then pass an enabling act for the enforcement of its provisions and the work will be complete. No opposition is expected to the accomplishment of these final details.

Space is here given to the full text of this treaty in order that the readers of BIRD-LORE may have the opportunity of reading the exact language of this important document.

Treaty for the Protection of Migratory Birds in the United States and Canada

Whereas many species of birds in the course of their annual migrations traverse certain parts of the United States and the Dominion of Canada; and

Whereas many of these species are of great value as a source of food or in destroying insects which are injurious to forests and forage plants on the public domain, as well as to agricultural crops, in both the United States and Canada, but are nevertheless in danger of extermination through lack of adequate protection during the nesting-season or while on their way to and from the breeding-grounds;

The United States of America and His Majesty the King of Great Britain and Ireland and of the British dominions beyond the seas, Emperor of India, being

desirous of saving from indiscriminate slaughter and of insuring the preservation of such migratory birds as are either useful to man or are harmless, have resolved to adopt some uniform system of protection which shall effectively accomplish such objects, and to the end of concluding a convention for this purpose have appointed as their respective plenipotentiaries:

The President of the United States of America, Robert Lansing, Secretary of State of the United States; and

His Britannic Majesty, the Right Honorable Sir Cecil Arthur Spring Rice, G. V. C. O., K. C. M. G., etc., His Majesty's ambassador extraordinary and plenipotentiary at Washington;

Who, after having communicated to each other their respective full powers, which were found to be in due and proper form, have agreed to and adopted the following articles:

Article 1. The High Contracting Powers declare that the migratory birds included in the terms of this Convention shall be as follows:

1. Migratory Game Birds:

(*a*) Anatidæ or waterfowl, including brant, wild ducks, geese, and swans.

(*b*) Gruidæ or cranes, including little brown, sandhill, and whooping cranes.

(*c*) Rallidæ or rails, including coots, gallinules, and sora or other rails.

(*d*) Limicolæ or shore-birds, including avocets, curlew, dowitchers, godwits, knots, oyster catchers, phalaropes, plovers, sandpipers, snipe, stilts, surf birds, turnstones, willet, woodcock, and yellowlegs.

(*e*) Columbidæ or pigeons, including doves and wild pigeons.

2. Migratory Insectivorous Birds: Bobolinks, catbirds, chickadees, cuckoos, flickers, flycatchers, grosbeaks, humming birds, kinglets, martins, meadowlarks, nighthawks or bullbats, nut-hatches, orioles, robins, shrikes, swallows, swifts, tanagers, titmice, thrushes, vireos, warblers, wax-wings, whippoorwills, woodpeckers, and wrens, and all other perching birds which feed entirely or chiefly on insects.

3. Other Migratory Non-game Birds: Auks, auklets, bitterns, fulmaks, gannets, grebes, guillemots, gulls, herons, jægers, loons, murres, petrels, puffins, shearwaters, and terns.

Article II. The High Contracting Powers agree that, as an effective means of preserving migratory birds there shall be established the following close seasons during which no hunting shall be done except for scientific or propagating purposes under permits issued by proper authorities.

1. The close season on migratory birds shall be between March 10 and September 1, except that the close season on the Limicolæ or shorebirds in the Maritime Provinces of Canada and in those States of the United States bordering on the Atlantic Ocean which are situated wholly or in part north of Chesapeake Bay shall be between February 1 and August 15, and that Indians may take at any time scoters for food but not for sale. The season for hunting shall be further restricted to such period not exceeding three and one-half months as the High Contracting Powers may severally deem appropriate and define by law or regulation.

2. The close season on migratory insectivorous birds shall continue throughout the year.

3. The close season on other migratory non-game birds shall continue throughout the year, except that Eskimos and Indians may take at any season auks, auklets, guillemots, murres and puffins, and their eggs, for food and their skins for clothing, but the birds and eggs so taken shall not be sold or offered for sale.

Article III. The High Contracting Powers agree that during the period of ten years next following the going into effect of this Convention, there shall be a continuous close season on the following migratory birds, to-wit:

Band-tailed pigeons, sandhill and whooping cranes, swans, curlew, and all shore-birds (except the black-breasted and golden plover, Wilson or jack snipe, woodcock, and the greater and lesser yellow-

legs); provided that during such ten years the close seasons on cranes, swans, and curlew in the Province of British Columbia shall be made by the proper authorities of that Province within the general dates and limitations elsewhere prescribed in this Convention for the respective groups to which these birds belong.

Article IV. The High Contracting Powers agree that special protection shall be given the wood duck and the eider duck, either (1) by a close season extending over a period of at least five years, or (2) by the establishment of refuges, or (3) by such other regulations as may be deemed appropriate.

Article V. The taking of nests or eggs of migratory game or insectivorous or non-game birds shall be prohibited, except for scientific or propagating purposes under such laws or regulations as the High Contracting Powers may severally deem appropriate.

Article VI. The High Contracting Powers agree that the shipment or export of migratory birds or their eggs from any State or Province, during the continuance of the close season in such State or Province, shall be prohibited except for scientific or propagating purposes, and the international traffic in any birds or eggs at such times captured, killed, taken, or shipped at any time contrary to the laws of the State or Province in which the same were captured, killed, taken or shipped shall be likewise prohibited. Every package containing migratory birds or any parts thereof or any eggs of migratory birds transported, or offered for transportation from the Dominion of Canada into the United States or from the United States into the Dominion of Canada, shall have the name and address of the shipper and an accurate statement of the contents clearly marked on the outside of such package.

Article VII. Permits to kill any of the above-named birds which, under extraordinary conditions, may become seriously injurious to the agricultural or other interests in any particular community, may be issued by the proper authorities of the High Contracting Powers under suitable regulations prescribed therefor by them respectively, but such permits shall lapse, or may be cancelled, at any time when, in the opinion of said authorities, the particular exigency has passed, and no birds killed under this article shall be shipped, sold, or offered for sale.

Article VIII. The High Contracting Powers agree themselves to take, or propose to their respective appropriate law-making bodies, the necessary measures for insuring the execution of the present Convention.

Article IX. The present Convention shall be ratified by the President of the United States of America, by and with the advice and consent of the Senate thereof, and by His Britannic Majesty. The ratifications shall be exchanged at Washington as soon as possible and the Convention shall take effect on the date of the exchange of the ratifications. It shall remain in force for fifteen years, and in the event of neither of the High Contracting Powers having given notification, twelve months before the expiration of said period of fifteen years, of its intention of terminating its operation, the Convention shall continue to remain in force for one year and so on from year to year.

In faith whereof, the respective Plenipotentiaries have signed the present Convention in duplicate and have hereunto affixed their seals.

Done at Washington this sixteenth day of August, one thousand nine hundred and sixteen.

[Seal] ROBERT LANSING

[Seal] CECIL SPRING RICE

NEW MEMBERS AND CONTRIBUTORS

Enrolled from July 1 to September 1, 1916.

New Members:

Arizona Audubon Society
Audubon Society of Missouri
Augusta Bird Club
Bakewell, Miss Martha P.
Bancroft, Mrs. Samuel
Beardslee, Mrs. L. R.
Betts, Alfred
Blatz, William C.
Brayton, Mrs. C. B.
Browne, D. L.
Carlin, Mrs. Harriet A.
Cave, Edward
Chalfant, Miss Isabella C.
Copeland, Mrs. Charles
Crane, Mrs. C. R.
Cumberland Audubon Society
du Pont, Mrs. Coleman
du Pont, Mr. and Mrs. Pierre S.
East Tennessee Audubon Society
Elliott, George F.
Fischer, Miss Anna
Flinn, Mrs. Ralph E.
Foreman, Miss Grace
Foster, William B.
Friend, T. W.
Garrett, Miss Helen S.
Graham, Charles J.
Grant, Mrs. Martha K.
Haight, Miss Frances
Harrington, Mrs. W. F.
Harris, Harold
Hegeman, Mrs. Mary A.
Henderson, Mrs. May A.
Hoover, W. H.
Huntsville Bird Club.
Imbrie, James, Jr.
Ingraham, Mrs. Louis
Jenkinson, Miss Gertrude
Knight, Mrs. Webster
Lauerman, Charles J.
Lewis, Mrs. Elizabeth W.
McCann, Mrs. Laura T.
Magee, Mrs. Emma S.
Millbrook Garden Club
Milligan, Mrs. Robert
Minnesota Game Breeding and Protective Association
Moore, Mrs. B.
Nebraska Audubon Society
Normal School of Washington (State)
Pearmans, Mrs. John D.
Pease, Mrs. A. D.
Pennsylvania Audubon Society
Richmond Bird Club
Rumson Bird Club
Shepard, Miss Clara
Singer, G. Harton

New Members, continued

Slack, Miss Clara M.
Somerset Hills Bird Club
Speer, John Z.
Sprigg, John M.
Spruance, W. C., Jr.
Stearns, Mrs. F. W.
Stickley, Mrs. B. F.
Sturgis, Miss Lucy C.
Swezey, Mrs. F. A.
Van Santvoord, Seymour
Walker, Mrs. R. W.
Wead, E. J.
Weaver, Miss Sarah W.
Wesson, Mrs. W. H.
West Tennessee Audubon Society
Whiteman, Mrs. J. Harvey
Whitney, Mrs. G. G.
Wilson, Mrs. G. G.
Wing, John Morgan
Wood, Arthur M.
Wrenn, Philip W.

New Contributors:

Abbott, Elizabeth T., and Hope
Anonymous
Arnold, Rev. Harold G.
Cowles, W. H.
Hamlen, Elizabeth P.
Plummer, Mrs. Charles N.
Stearns, Mrs. Walter H.
Stephenson, Mrs. Isaac
Stewart, Mrs. P. B.
Tucker, Gilbert M.

Contributors to the Egret Fund

Previously acknowledged	$3,237 01
Bell, Mrs. D. M.	5 00
Bonham, Miss Eleanor M.	25 00
Clyde, William P.	50 00
Curtis, Miss A.	25 00
Davis, Dr. Gwilym G.	5 00
de la Rive, Miss Rachel	5 00
Foster, Mrs. Cora D.	1 00
Gilman, Miss C. and Friends	4 00
Horton, Miss F. E.	2 00
Jones, Mrs. Cadwalader	5 00
Kleinschmidt, Miss Helen	1 00
Lang, Henry	5 00
Miller, Ernest L.	2 00
Morison, Mrs. John H.	50 00
Vaillant, Miss Maria J.	3 00
Van Dyke, Dr. Tertius	5 00
Woman's Study Club	3 00
Young, Miss Emily W.	10 00
	$3,443 01

NEWS OF OUR AUXILIARIES

This is the season of state and county agricultural fairs, when rural people come together prepared to see new things and to carry away new ideas. The Audubon people are alive to the excellent opportunities these fairs present for impressing the value of bird-protection upon the minds of country folks, who of all persons ought to be most solicitous for the preservation of bird-life, looked at from any point of view. In many cases, therefore, from one coast to the other, local societies are represented by exhibition-booths at these fairs, showing the good work done by birds in behalf of the farmer, and distributing printed information. This Association has received many calls for its leaflets and circulars to be distributed in this way, and has gladly furnished such supplies, recognizing the value of the opportunity for educational service.

State and local societies are working busily and effectually in many other directions.

The Audubon Society in Detroit, Michigan, where there is a large foreign population, is grappling with the task of preventing the wanton destruction of bird-life by aliens, who suppose they can kill any and every bird here as they have been accustomed to do in their south-European homes. Many violations of the law have been reported, and these reports are being tabulated by districts, and notices will be posted in the foreign languages spoken in each district in which an undue number of offenses are committed. Similar educational work and warnings are needed in many other places.

When a society has existed seven years, and has grown steadily, one may be sure that there is a strong and intelligent interest in bird-work in that community. This is the creditable condition in Buffalo, N. Y., where the local society reports a paid-up membership of 260—52 more than last year—and more than $400 surplus in the treasury. The influence of this active society, of which Dr. C. E. Beach is Chairman and Mrs. G. M. Turner, Secretary, extends throughout a large area suburban to Buffalo.

Another society with money in hand, and the will to use it in bird-work, is that of Omaha, where a masque was recently held under its auspices the net profit of which was $400. This society devised last summer a model scheme for stimulating interest among children by offering prizes for the best collection of the pictures of birds printed on the wrappers of a bread-selling company. Three boys, working together, sent in 2,081 pictures and got a coveted pair of field-glasses with which to continue their studies, and many other children took lesser prizes.

The Audubon Society of Illinois has joined heartily, as might be expected, in the movement to preserve as a national park the wilderness of sand-dunes on the south shore of Lake Michigan. Among the many reasons for approving this project is the sanctuary it would afford for a great variety of birds, especially the useful seed-eaters and the game-birds.

Seattle's Audubon Society makes a special feature of its bird-walks, which are taken frequently to one or another of the many excellent places for observation in the varied country about that favored city.

The Audubon Society of Minneapolis has been active in furthering the desire of many citizens to preserve for public use the old home of Senator Washburn in Washburn Park. The society wants rooms set apart for a bird-museum in the old mansion.

Among the newest and busiest of the clubs affiliated with this Association is the Bird Club of Long Island, of which Col. Theodore Roosevelt is President. At a recent meeting at Sagamore Hill reports were given of activities in several directions, of which that most immediately important was the posting of signs.

1. Cactus Wren
2. Cañon Wren
3. Carolina Wren
4. Rock Wren
5. Guadalupe Rock Wren

(One-half natural size)

Bird-Lore

A BI-MONTHLY MAGAZINE
DEVOTED TO THE STUDY AND PROTECTION OF BIRDS
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. XVIII NOVEMBER—DECEMBER, 1916 No. 6

Winter Bird Photography

By CLARENCE F. STONE, Branchport, N. Y.
With photographs by the author

EARLY in February, 1916, I established a feeding-place for birds close to the side of a building, with the primary object of obtaining bird photographs.

For feed I obtained several bushels of weed-seed at a local grain-elevator, and this waste proved to be an ideal bird-food as it contained almost every kind of weed-seed indigenous to this section of the state.

A small artificial mound of snow was made and seed scattered on its slope,

SNOW BUNTINGS, HORNED LARKS AND TREE SPARROWS

TREE SPARROW 'HISSING' AT A TRESPASSING ENGLISH SPARROW

which not only made an excellent background but was especially adapted to photographing groups of birds.

To this choice weed-seed restaurant birds were at once attracted, the eager, chattering throng soon numbering about three hundred.

Many Tree Sparrows, a few winter Song Sparrows, squeaky-voiced Prairie and Horned Larks, a female Red-winged Blackbird which probably was a winter sojourner, and the dashing Snow Buntings cavorted around among the lively group in a most vigorous manner.

With the Snowflakes came a rare Lapland Longspur, and I was fortunate to obtain several photographs of this unusual bird in as many attitudes.

LAPLAND LONGSPUR

LAPLAND LONGSPUR, FEMALE RED-WINGED BLACKBIRD AND SNOW BUNTING

SONG SPARROW PROTESTING AT AN INTRUDING ENGLISH SPARROW

SNOW BUNTING AND ENGLISH SPARROWS

The Lapland Longspur associated with the Snow Buntings when in flight, but mixed with the other birds quite freely when feeding.

As Crows showed a desire to alight at this feeding-place, suet was added to the menu; but, as this also attracted roaming dogs and sneaking cats, this universal bird-food was dropped from the bill of fare.

During the three weeks that this feeding-station was maintained, the close to three hundred small birds and about twenty-five Pheasants consumed about eight bushels of weed-seed.

Wheat and corn were offered the Pheasants, and while they consumed it, yet they would eat and scratch around in the weed-seed in preference to the grains.

SNOWY OWL
Photographed by H. E. Pittman, Wanchope, Sask.

Dick, the Sandhill Crane

The following story told me by Mrs. William Derby, of Garibaldi, Oregon, of a pet Sandhill Crane that she had in Nebraska in 1879, is interesting not only as a realistic picture of the bird's habits in domestication, but for the hints it gives of the play instinct, sense of humor, and general Crane psychology.—Florence Merriam Bailey.

"THEY ketched him when they was out on the prairie—they'd been out at Swan Lake elk hunting. He was hid in the high grass and the old Crane, he skulked off. They got out and picked him up—he was nothin' but a downy feller. They ketched frogs and cut up and give him. When they got home we'd ben off on a clam hunt, and we fed him on clams till the corn was ripe in the fall.

"He had peeped for four days under a box, and then I took him down fishin'. He just jumped up and down and hollered—seemed as if he laughed. He jumped up and down in the water to wash himself and then, when he was through, he was ready to leave the country—he went just as hard as he could go toward the corn-field, and me after him. He ran onto a turkey hen, and she knocked him into a bunch of cactus. He turned right 'round and come for me then, peeping as hard as he could peep. I took him up in my arms and carried him back to the house and laid him down on the grass, and he come and sat by me. He never offered to run again—would foller just like a dog.

"That was June. In August we built our sod-house. It took me about five weeks to haul the sod—we had a pair of steers I was breakin'—I was fifteen then. I'd get my sod loaded and Dick would walk along with me. I'd say, 'Dick, let's run, have a race;' and he'd hustle around to get him a grasshopper—native grasshoppers, big fellers. I'd say, 'Now Dick, you ready?' And he'd say, *Peep*. Sometimes he'd kind o' help himself with his wings, tiptoe along, and he'd beat me to the team. Then he'd stick up his head, straight up, and laugh—sounded more like a person than anything else—you could hear him laugh for a mile. But, if I beat him, he didn't have nothin' to say!"

By this time he had grown about five feet, so tall that, as Mrs. Derby explained, "he could stretch up and feel of my face. Go and lay down on the ground and pretend we was asleep, and he'd feel 'round and then come and poke 'round in our heads, as if pickin' himself, and take hold of our eyelids, to make us open our eyes—he never would hurt—and all the time kept up a low talkin'. Then he'd go to sleep—fold up his legs and sit down flat and put his head on his shoulders.

"Along in the summer, a Hawk or Eagle or something swooped down at him or a chicken, and Dick screamed and the old man went out with a gun, and Dick went right up into the air and sailed 'round, and when the bird dropped he dropped and picked him up and throwed him 'round and laughed and peeped and made all sorts of Crane noises.

"He loved a gun—loved to go with the old man a'huntin'. If the old man would kill a goose, he'd act as if he was tickled to death. When it began to get cold and there was snow on the ground, he couldn't foller huntin', for they're a tender bird, and we'd have to shut him up. He knew just as well as we did when some of us was gettin' ready to go huntin', and he'd get uneasy." He got so that he would go off before it was time to shut him up. "Then," as she said, "he'd fly up in the air and sail around till he'd find us. If there was snow on the ground, he'd stand on a hill first on one foot and then on the other till he got off a ways, and then he'd fly and light down by us and laugh."

In the fall he had roosted between the creek and the pond, "But," she went on, "when it got too cold for him to do that, I'd ketch him and put him in behind the cows. One cold night I wanted to get him in, bad—I knew it was goin' to freeze—but he said *Peep*, and *Keet, keet*, and got away from me. In the morning he didn't come. I went up with my heart in my mouth—I expected to find him dead. I got up there and he was standing on one leg, the other one froze in the ice. I thought his leg was froze, and I says, 'Dick!' and he says, *Peep*, as pitiful. I broke the ice for him and took him under my arm and hiked for home and stood him in a tub of snow-water. His leg wasn't froze at all, but it was a long time before he wanted to go to the creek again—he was a willin' barn chicken after that.

"In the spring, when the old man went down to the town, Dick went with me to my traps—I had traps settin' for muskrat, mink, skunk, and wolves. Dick heerd a gun, and thought it was the old man and flew after him. I called him and he answered me—*Peep*—but wouldn't come back. I heerd him light and laugh, and then heered another shot and didn't hear him laugh no more. It was about a week we didn't see nor hear nothin' of Dick—I'd give him up for dead. Then the old man went up to the pond fishin' one day, and Dick was there, covered with dried blood, and weak. But he wouldn't let him ketch him, so he come home and tell me about it. Of course I went up as tight as my legs would carry me. He wouldn't let me ketch him, but he followed me home. He was pretty near starved, but he began to pick up, to fat up.

"In about three weeks we moved away, and they wouldn't let me take him—thought he was too weak to foller and we'd get him in the fall. But after we was gone the feller who shot him before killed him—and we never saw no more of Dick."

Observations on Woodpeckers

By WILL O. DOOLITTLE, Munising, Mich.

AS MUCH of the wealth derived from the natural resources of the Upper Peninsula of Michigan is still found in the timber, that form of bird life which has a direct effect upon the forests is of importance to the landowners, as well as of supreme interest to the bird student.

Northern Michigan woods are thickly inhabited by such forest-dwelling birds as are found in the families of Wood Warblers, Vireos, Creepers, Nuthatches, Titmice and Kinglets, and all of these have an appreciable value in the protection of trees and the conservation of wood products. It is to the Woodpeckers, however, that the timber owner has come to look for the most thorough protection from the insect pests which are known to be detrimental. The effect of the woodpeckers upon growing trees and finished wood products has been so comprehensively handled by the United States Biological Survey, in several excellent bulletins, that a discussion here of their value would be superfluous. However, a few personal observations of the several species of Woodpeckers found in the forests of the North may be of interest.

A special opportunity for close observation of the Woodpeckers was afforded the writer, late last summer, at a small projection of land in Ross Lake, Schoolcraft County. This piece of land contained about one hundred hemlock trees, which had been killed by fire, and which, to judge from the feast they were affording the Woodpeckers, were the hosts for vast numbers of borers and other wood-infesting insects. On the small projection of land were observed feeding at the same time, Hairy, Downy, Pileated and Arctic Three-toed Woodpeckers. The last were the most numerous, and, as the species is rare south of the straits, it was considered a piece of good fortune to be able to spend several days in the vicinity and note carefully its habits.

In Chapman's 'Handbook' there is the following quotation from Audubon, on the Arctic Three-toed Woodpecker: "It is a restless, active bird, spending its time generally on the topmost branches of the tallest trees. Although it cannot be called shy, its habitual restlessness renders it difficult of approach."

The writer's observations are entirely at variance with this conclusion of Audubon's. Of the four species of Woodpeckers feeding on the dead hemlocks, it was the only one that did *not* ascend to the higher branches. Practically all of the Three-toed Woodpeckers' feeding was done on the trunks of the trees. If I had been in possession of a good camera, on the bright days, there would have been no difficulty in securing good pictures of *Picoides arcticus* at lunch. Unfortunately, the only time I had a camera was on a dark, foggy day, and, as the camera itself was a poor affair, not even a distinct picture of the trunks of the trees could be secured.

The Arctic Three-toe displayed no habitual restlessness. On the contrary, the birds were the most industrious and patient of any of their family. They

hacked away at the trunks with monotonous regularity, and every time I visited the feeding-place the incessant hammering could be heard. A Hairy Woodpecker, feeding nearby, did not show this indifference to its surroundings, or the one-minded purpose to locate its food. It would hammer on a limb, utter its cry, fly to another tree, eye me with its head on one side, shift cautiously to the far side of the tree, and repeat the whole performance, with variations. This behavior was also followed by several Downy Woodpeckers. They displayed much more restlessness than the Three-toed Woodpeckers, and, in the same length of time, secured much less food. Too much time was spent in flying about and in other unnecessary maneuvers, and they did not seem to possess the patience to hew so persistently to one line until the choice tidbits appeared.

The Three-toed Woodpeckers did not seem to be aware of my presence so long as I approached them slowly and quietly. On one occasion, I reached out and touched a bird with the short barrel of my rifle. I observed, among other things, that the Three-toed Woodpeckers deliver a less direct blow upon a tree than do others of the family. They prefer a side movement or glancing blow, which appears to be just as efficacious in removing the bark and wood.

It was not only at Ross Lake that I found the Arctic Three-toe to be an extremely industrious and patient worker. Birds seen and studied at various places near Munising and in the pine reservation near Grand Marais, Alger County, showed the same habits. The shining black back of this bird and, in the male, the golden spot upon the forehead make identification easy. The American Three-toed Woodpecker, distinguishable from the Arctic by its barred white and black back, does not seem to inhabit the Upper Pensinsula, although I was under the impression that I saw one at Grand Marais, but could not make identification certain.

There were several Pileated Woodpeckers feeding on the dead hemlocks at the Ross Lake projection. These birds were rather shy, probably because the Pileated is a mark for nearly every hunter. They did very effective work upon the trees, tearing off large sections of bark with their strong, chisel-like bills. The 'Logcock' is not uncommon in Upper Michigan, but it is losing out in the struggle for existence because its large size and flaming red crest make an attractive mark for the ignorant or reckless hunter. On Grand Island, where birds are protected, the Pileated would feed in close proximity to our camps.

The Pileated is rarely seen feeding on live trees, but the dead hemlocks, which practically have been pulled to pieces by this bird, show something of its strength and energy. It has a clear, rattling call, similar to the spring call of the Flicker, but much more penetrating.

While I saw no Flickers at Ross Lake, the trail a few miles away was thick with them, and, as they suddenly rise from beneath one's feet, it is with difficulty that the Grouse hunter refrains from shooting at them for his legitimate

game. Generally, the white rump-patch is displayed in time to save Mr. Flicker. In the fall the Flicker is perhaps the most numerous of any of the Woodpeckers in the Upper Peninsula, being found on nearly every road and trail, feeding upon ants and bugs and worms that are found upon the ground. In the spring and summer the Flicker keeps more to the woods and is not so noticeable. It is probable that, in the fall flocks, there are many birds which nest farther north. Few Flickers remain here throughout the long winter.

On the large forest and game preserve of Grand Island, the Yellow-bellied Sapsucker is the predominating member of the family, and its cat-like call can be heard at almost any time in the spring and summer. There are evidences of its destructive work everywhere on the island, and many young trees have been girdled by this sole harmful member of the Woodpecker family. It seems to prefer the young hemlock, basswood, mountain ash, paper birch and shad. The more valuable timber, such as the sugar maple and yellow birch, is not often touched. Nevertheless, steps should be taken to reduce the numbers of this bird on the island, for its work is plainly detrimental. On the mainland the Sapsucker does not seem to be very common.

A few years ago the Red-headed Woodpecker was almost unknown in the Upper Peninsula, but every year sees an increase in its numbers. Especially is this true on the cut-over lands and those lands which have been recently opened to agriculture. The bird is not found in the deep forests.

Throughout the year, the Hairy and Downy Woodpeckers give us their steadiest company and, by their numbers, perform the most efficient service of this very valuable family of birds.

A House Wren Record

By HUBERT PRESCOTT, Ashland, Oregon
With a photograph by the author

HOUSE WREN

APRIL 15, 1915: A pair of House Wrens began to build in a bird-house under the eaves of our wood-shed. After the nest had been completed and the eggs laid, for some reason I did not see the Wrens around the wood-shed any more; and a pair of Wrens, which I supposed were the same pair that built in the bird-house on the wood-shed, were starting to make a nest in another bird-house on a fence-post.

After several days of watching, I made sure that the Wrens were not occupying the box on the wood-shed, and I took it down. It contained six completely broken eggs and the mother Wren, which had caught her foot in horse-hair and starved to death. The father Wren had then found another mate, and they had begun to make a new home in the other bird-house.

This bird-house was not more than five feet from the ground, and the top opened so that the nest and eggs could be seen and the birds photographed conveniently.

The Wrens were very fearless, and I could stand within less than a yard of their bird-house in order to take their pictures while they were carrying nest material.

Three eggs were laid in their new nest, but the mother bird did not brood them. One day I looked in the bird-house and the eggs were gone. The hole in the bird-house was too small for a weasel or other birds to get in, so I knew it must have been the Wrens. Next they removed the lining of the nest, and in a few days relined it and six eggs were laid.

A few days after that, I erected a bird-house on a fifteen-foot pole. The instinct of the Wrens led them to the higher and safer place, and they left the nest of six eggs, perhaps because I was around too much, making them uneasy. They rebuilt their nest in the bird-house on the pole and hatched a successful brood.

I wished to secure some photographs of the Wrens feeding their young, and take some records of the food fed. I knew House Wrens well enough to know they would not leave their young, or even their eggs, if they didn't

have any place else to go; so I waited until the young Wrens were about ready to leave the nest and lowered the pole, took the bird-house off and set it on the fence-post. I was afraid the old Wrens would coax the young to leave the nest, but they didn't. It was a change of about ten feet lower altitude, but the old Wrens fed the young while I took photographs of them.

July 26 and 27, 1915, I took a record of the food fed by this pair of Wrens, the time between every insect fed, and the average number of insects fed in the given time. It reads as follows:

MORNING, BEGINNING AT SUNRISE

Insects fed	Time, min.
1. Cabbage-worm and Grasshopper	
2. Green cricket	2
3. Miller	½
4. Miller	4
5. Pupa	2
6. Grasshopper	½
7. Grasshopper	7
8. Grasshopper	1½
9. Pupa	5
10. Moth	4
11. Moth	2
12. Pupa	2
13. Small bug	3
14. Moth	3½
15. Fly	3½
16. Moth	½
17. Moth	4½
17 times in	45½

EVENING, BEGINNING AT 5:30

Insects fed	Time, min.
1. Miller	
2. Green cricket	2
3. Cabbage-worm	½
4. Pupa	4
5. Spider	2
6. Green cricket	½
7. Grasshopper	½
8. Daddy-longlegs	7
9. Daddy-longlegs	1½
10. Grasshopper	5
11. Miller	4
12. Moth	2
13. Moth	3
14. Green cricket	3½
15. Green cricket	3½
16. Snail	½
17. Grasshopper	½
18. Daddy-longlegs	½
18 times in	40½

Notes on the Plumage of North American Birds

FORTY-FIRST PAPER

By W. DeW. MILLER

(See Frontispiece)

In all Wrens the sexes are nearly or quite indistinguishable in coloration. The slight seasonal differences are due only to wear and fading. In its juvenal dress the young bird is not strikingly different from the adult, and the first winter plumage cannot be distinguished from that of older birds except by slight differences in the wings and tail, which are not renewed at the post-juvenal molt.

Cactus Wren (*Heleodytes brunneicapillus couesi*, Fig. 1).—Nestlings (juvenal plumage) differ from birds in the first winter or subsequent plumages in the much smaller and less intense black of the spots on the throat and chest. The back is spotted rather than streaked with white, and the brown of the nape is usually less reddish. With the assumption of its winter plumage the young bird becomes like the adult. The worn summer plumage lacks the smoothness of the fresh autumn dress, but is little affected by fading.

Two forms of this species are found in the southwestern United States—the Cactus Wren proper (*H. b. couesi*) from Texas to Nevada and California, and Bryant's Cactus Wren (*H. b. bryanti*) on the Pacific coast of California and northern Lower California. The latter is darker and browner, more conspicuously streaked with white above and with larger or more numerous black spots below. Three other races occur in Mexico, one of them in the Cape Region of Lower California.

Cañon Wren (*Catherpes mexicanus conspersus*, Fig. 2).—The nestling plumage is similar to that of the adult, but the spots of the upperparts are obscure, and the brown of the belly duller and usually immaculate. Subsequent plumages are all very similar to that of the first winter.

The Cañon Wrens inhabit the greater part of Mexico and the western portion of the United States. Varying slightly in size and coloration in different parts of this area, they are, like the Cactus Wrens, divisible into several geographic races. One of these is exclusively Mexican, while three are found in the United States. The White-throated Wren (*C. m. albifrons*) is chiefly Mexican, barely reaching our limits in western Texas. The Cañon Wren (*C. m. conspersus*) of the Great Basin and Rocky Mountain region is considerably smaller than the preceding; and the Dotted Cañon Wren (*C. m. punctulatus*) of the Pacific coast region, while equally small, is decidedly darker in color.

Carolina Wren (*Thryothorus ludovicianus*, Fig. 3).—When it leaves the nest, the young Carolina Wren scarcely differs in color from the adult, but is somewhat paler. The summer plumage is less richly colored than the fresh fall dress, especially below, where the deep buff or cinnamon fades almost to white before the annual molt.

Four races of this species are recognized, one of them confined to northeastern Mexico. The typical form (*T. l. ludovicianus*) inhabits the eastern United States. In peninsular Florida it is replaced by a large, dark race, the Florida Wren (*T. l. miamensis*), and in the lower Rio Grande Valley, Texas, and adjacent parts of Mexico by the Lomita Wren (*T. l. lomitensis*), characterized by slightly smaller size and decidedly paler and duller colors.

Rock Wren (*Salpinctes obsoletus*, Fig. 4).—Young birds in juvenal plumage are unmarked above except for inconspicuous dusky bars on the back, while the underparts are immaculate and purer white than in the adult. In worn summer plumage the adult is usually browner than in the autumn.

Six forms of the Rock Wren have been differentiated. The typical race (*S. o. obsoletus*) is found over a large part of the western United States, while the San Nicolas Rock Wren (*S. o. pulverius*), differing in its larger bill and paler coloration, is confined to the small island of San Nicolas off the coast of southern California. The remaining four races are Mexican.

Guadalupe Rock Wren (*Salpinctes guadeloupensis*, Fig. 5).—This Wren, found only on Guadalupe Island, Lower California, is scarcely more than a subspecies of the common Rock Wren. It differs from the latter in darker color, shorter wing and tail and larger bill. Young birds are much darker than those of the typical form.

Bird-Lore's Seventeenth Christmas Bird Census

BIRD-LORE'S annual bird census will be taken as usual on Christmas Day, or as near that date as circumstances will permit; *in no case should it be earlier than December 22nd or later than the 28th*, and western observers can hardly hope to wait till the last days and still get their reports in in time for publication. Without wishing to appear ungrateful to those contributors who have assisted in making the census so remarkably successful, lack of space compels us to ask each census taker to send only *one* census. Furthermore, much as we should like to print all the records sent, the number received has grown so large that we shall have to exclude those that do not appear to give a fair representation of the winter bird-life of the locality in which they were made. Lists of the comparatively few species that come to feeding-stations and those seen on walks of but an hour or two are usually very far from representative. A census walk should last four hours at the very least, and an all-day one is far preferable, as one can then cover more of the different types of country in his vicinity, and thus secure a list more indicative of the birds present. A census covering several days would really be just that much more satisfactory, but, as few of our readers are in a position to take such, we think it better to discourage them, that all the censuses may be more comparable.

Bird clubs taking part in the census are requested to compile the various lists obtained by their members, and send the result as one census, with a statement of the number of separate ones it embraces. It should be signed by all the observers who have contributed to it. When two or more names are signed to a list, it should be stated whether the observers hunted together or separately. Only censuses that cover areas that are contiguous and with a total diameter not exceeding fifteen miles should be combined into one census.

Each unusual record should be accompanied by a brief statement as to the identification. When such a record occurs in the combined list of parties that hunted separately, the names of those responsible for the record should be given.

Reference to the February numbers of Bird-Lore, 1901–1916, will acquaint one with the nature of the report that we desire, but to those to whom none of these issues is available, we may explain that such reports should be headed by a brief statement of the character of the weather, whether clear, cloudy, rainy, etc.; whether the ground is bare or snow-covered, the direction and force of the wind, the temperature at the time of starting, the hour of starting and of returning. Then should be given, in the order of the A. O. U. 'Check-List' (which is followed by most standard bird-books), a list of the species seen, with exactly, or approximately, the number of *individuals* of each species recorded. A record should read, therefore, somewhat as follows:

Yonkers, N. Y., 8 A. M. to 12 M. Clear; ground bare; wind west, light; temp., 38°. Herring Gull, 75. Total — species — individuals.—JAMES GATES.

These records will be published in the February issue of BIRD-LORE, and it is particularly requested that they be sent the editor (at the American Museum of Natural History, New York City) by the first possible mail. *It will save the Editor much clerical labor if the model here given and the order of the A. O. U. 'Check-List' be closely followed.*

Notes from Field and Study

Killdeer Breeding in Eastern Massachusetts

The Squire and Derby farms in Revere slope gently down to the edge of the wide expanse of Lynn marshes. Over the latter, a shallow sheet of salt water creeps up, on the high run of tides, to touch the edge of the highland grasses.

In a long, narrow pasture, bordering a part of the marsh, are a few fresh-water mud-holes; while, out on the marsh, are the usual muddy tide sloughs, where Yellowlegs and smaller shore-birds love to feed and rest during migration. Much of the upland is covered with market gardens, and there are several broad fields in grass.

On June 25, 1913, while exploring this region for possible shore-birds, I unexpectedly ran upon three Killdeer, a bird I had rarely seen before, and then only in spring and autumn, considering them possible only as transients. All authorities give them as extremely rare in New England, although many years ago they were common.

Each year since 1913, I have found Killdeer present in this locality during the breeding season, my dates ranging from April 25 to September 27, and in each of the intervening months. I have never seen more than five birds at a time.

This region is very thoroughly gunned, in season, and I have seen Killdeer shot at, but they seem to hold their own, and show up in about the same numbers each year.

I have never been fortunate enough to find either eggs or immature birds, but their continued presence through the breeding season, for several years, surely indicates their breeding.

Living several miles from the region described, I have not been able to study the birds so closely as I should like. I find them in a variety of surroundings, from the shallow tide pools to the plowed ground of the market-gardens.—Arthur P. Stubbs, *Lynn, Mass.*

An Upland Plover's Nest

High on a New Hampshire hillside is a grassy pasture. For fifty years and more the pasture has held its own against the slowly advancing forest; and the winds move pleasantly over its dry, thin grasses, its hard-hack, and its gray, lichen-covered rocks. Now its wildness has been profaned, for a house of field stones has cropped out where the stone wall traced a boundary; but the Dwellers-in-the-House hallow the pasture and its creatures.

Perhaps of all the bird music we love most the plaintive notes of the Upland 'Plover.' These wild, shy sandpipers are not afraid of us, and alight on fence posts, raise their wings high above their backs, extend them and then tuck them nicely in place and utter their cry, eying us the while. We follow them as they wade through the grass—always at our distance.

It was the spring-time (1916). The prolonged wail, vague and sad, of the Plovers rose in our upland pasture. I watched them carry on their odd courtship; hopping toward each other, twittering, flying away, then repeating it all again, the hopping, twittering and retreating. Ungainly, spirit-voiced birds! Once from out the black, vibrant night came the eerie, long-drawn whistle of a Plover-lover.

And then came the discovery! It was on May 21 and in the pasture directly in front of the house. An Upland Plover had whirred up before us, fluttering over the ground on and on, and dragging its poor wings as though broken. Distracted, brave mother-bird, she did her part! but her treasure was too near us! For under our feet was the nest—the nest of *Bartramia longicauda*! Simple it was; just four large, pointed eggs, blotched with purplish brown, lying on the rough pasture ground, encircled by wisps of dead

grass over which live grasses had been bent. This was the secret of the two birds, whom two weeks before for the first time and often since we had seen wading in the grass below the house, twittering first and then flying, and ever giving the mournful, plaintive cries. We never went near the nest again—that skunks and other foes might not follow our trail and cause tragedy. But we watched with field glasses from the upstairs windows. The birds relieved each other at the nest—a true division of domestic cares: one bird would alight at a long distance, fold his wings, utter no cry, and, with head held low, walk through the grass, squatting lower and lower till finally he disappeared on the nest; then the female would retreat with the same caution, not spreading her wings till far from the eggs.

Often on the grass terrace before the house—a platform sloping sharply down into the pasture—the male sandpiper would slowly strut; was he playing sentinel for his little family or cheering his lady-wife? Up and down, up and down, day after day walked the little father, wary and determined; that the piazza and living portion of the house faced him thirty feet away made no difference in his course. The Great Dane, corralled by the anxious family in the house, watched through the windows or from his chained post on the piazza. Baldur was a leashed dogship those days, for no chance could be taken that his great paws should crush the frail eggs or the helpless chicks.

They grew up, I am sure, those jealously guarded babies, and wade today our grassy slopes above the Connecticut Valley, eating grass-worms and grasshoppers. Next year we may find more nests; and perhaps our safe, secluded pasture may prove a recruiting ground for the lost legion of the Upland Plover race.—Katharine Upham Hunter, *West Claremont, N. H.*

Bob-white in the West

In introducing Bob-white, *Colinus virginianus*, into the western states, little thought to the natural environments of this most desirable of game birds has been given. Those who have exhibited much devotion to bird-life are actuated by commendable motives, when they endeavor to give to western fields the little brown birds that have proven such industrious partners to the farmers in the South in their efforts to combat insect pests. The more a community has to offer in the way of a plenitude of bird-life, the more it can boast of its freedom from harmful creatures, and the esthetic side, too, gains much.

Probably, if conditions where Bob-whites thrive were taken into consideration, greater success would follow their introduction into new places. The effects of capture, long travel, confinement, and the many other nervous little jars during their change from place, right at the start militate against their welfare. The better side only of the traffic in game birds we hear of; the loss of bird-life in this way is seldom mentioned. Even a change of water may have some appreciable influence on quails. But how, when and where they are liberated after their arrival are the most important subjects to be thought of. On these depend the burden of their future existence and perpetuation of their kind.

Sportsmen have been the ones who have done most for the propagation of Bob-whites in new countries. In truth, in this the inspiration for later sport with gun and dog has been the incentive, but yet field trial clubs in many places have been content to have these birds solely to observe the work of their setters and pointers on them. Others start to raise quails because they wish them on their estates, and they love them as they love all bird-life, and do all in their power to protect them.

The average place where quails have been planted in the West has been a ranch that has been kept scrupulously clean of foul weed growths. It seems that only the richer class and those who have succeeded in their farming attempts aspire to have Bob-whites established in their

community. Cleanliness and success in farming or fruit culture are inseparable. And just for this reason failures have resulted from attempts to establish Bob-whites in the West. The habitat in the South where the birds are most plentiful needs only to be cited to confirm this. The poorly cultivated or abandoned farm bearing in abundance only ragweed, lespedeza, sumach, rank growths of beggar lice and wild peas, is the home where they multiply the most. And there, also, as a guard against predatory creatures of the air, are the net-work of dewberry vines on the ground and the thickets of briars. Farms in the West that have been stocked with quails in most cases afford conditions directly the contrary. The natural winter feeds are lacking, and the shelters they have always frequented are not there.

It is reasonable to anticipate better results from the introduction of Bob-whites, if on every eighty acres of land one-half of an acre or even a smaller plot is given to the birds, and in it are planted feeds and cover vines as nearly similar as would grow to those in their own home. Immediately in this way they would reconcile themselves to their new quarters, having faith from the start in being able to ward off the attacks of predatory creatures, and being thoroughly assured of a supply of feeds that they really know and like. Whenever bird clubs accept this method of propagating Bob-whites, just so soon will their fields ring with the plaintive, melodious call of the quails.

Bird-lovers have shown an inclination to bring their pets to the very thoroughfares of the cities. Some city quarters are homes for Ring-necks and other pheasants, but the latest fad, and it evidences a chance of success, is to have Bob-whites roam on the city lawn. From this, one must not at once believe that the quails are cooped in a small yard, or that their liberties are in any way restricted, but they have the run of lawns growing large plants and shrubbery. In the fashionable dwelling-district of a city boasting a population of seven hundred thousand people, quails are seen feeding in the middle of the streets. The mansion where their owner resides, together with lawns and flower-gardens, occupy a city block. Certainly these royal birds add a touch of beauty and a faint atmosphere of the country to the surroundings. The owner's familiarity with game in a wild state has induced him to give the Bob-whites a small plot to themselves. It is the exact reproduction of an abandoned hill farm, to the most insignificant plant.

The most interesting part in this attempt at quail culture in a city is the assistance afforded by the small boys in keeping the locality free from prowling cats. This, too, has tempted other bird-life there.

When the dwellers of the city interest themselves in game birds to the degree that they will sacrifice something for their welfare, it is easy to conceive how promptly they can be instilled with a love for all wild birds. No matter to what extremities it will lead them when it develops into a passion, they will always feel well repaid for their devotion to these plucky little brown birds, when the turmoil of city life is suddenly stilled by the soft vibrant note of the calling quails. —John B. Thompson, *Doniphan, Mo.*

Notes on a Flicker Homestead

I have just finished reading some very interesting articles in the Wilson Bulletin on the habits and haunts of the Flicker. It calls to mind a nest of Flickers that my son's family and I have been watching for over a month. The old birds, in hunting for a suitable place for their nesting purposes, found a box which my son had nailed to a tree near our dining-room window and porch, thinking some birds might be attracted to it. The first year (1915) it was homesteaded by Gray Squirrels that spent quite a while hiding away nuts, I suppose for their winter food. The Flickers, after much deliberation, decided it was a safe and desirable place to locate, so they proceeded to clean house, which they did very effectually, each one by turns carrying away the old matter. It was

a good lesson for some of us in industry in caring for our homes. My son thought to assist them in their arduous work by gathering sawdust to line their nest. They seemed to appreciate his help, but spent some time in tossing part of it out, as he gave them more than they needed in their business. We watched them with much interest, fearing they would be frightened away, but they kept on diligently until satisfied that their selection was a good one and their quarters clean, then settled down to housekeeping. They relieved each other faithfully during the sitting operation. In a few weeks the young made their appearance. Then came the process of feeding, which impressed me very much, as I thought pigeons were the only birds that fed their young by regurgitation.

I had hoped to see how many were hatched, but they flew away before I realized they were ready for flight. It is interesting to know that these birds will build so near a human habitation. Now their home looks quite desolate and deserted, and makes one feel very lonely, remembering this is the fate of all things in life.

The parent birds came about the first of April, and the last one of the young took its flight on the eighth of June. We are hoping they were so well pleased and comfortably housed that they may return next year. In another tree nearby, some Bluebirds tried to take possession of a box, but the House Sparrows drove them away. Maybe they will be more successful another year.—Virginia S. Williams, *Takoma Park, Md.*

The Prairie Horned Lark in Summer

In Bird-Lore for July and August, Mrs. Arthur F. Gardner, of Troy, N. Y., writes very entertainingly of a visit from the Horned Larks, and asks someone who knows of them in their summer home to write about them.

Here on the plains of eastern Nebraska we have the Prairie Horned Lark, which is a little smaller and paler than the Horned Lark, but easily recognized as of that species by the erectile feathers on each side of the head.

I have never found a nest, and have seen the birds always along the highway, where they pick up the grain spilled from the farmers' wagons. They are very friendly, often running along ahead of the horse for some distance, or making little flying trips very low, and dropping again to feed.

As this road is now a part of the great Lincoln Highway, I seldom see my Larks any more.—E. Louise Mace, *Columbus, Neb.*

Evening Grosbeaks and a Wood Duck in Maine

The Evening Grosbeaks stayed in Bangor nearly all last winter. About the middle of January they were first seen in Hampden, by a friend of mine. March 17, I saw one, for the first time in my life. April 1, I saw a large flock, of over a hundred. They stayed in Hampden till April 26; but I have not seen them since.

April 30, I saw a beautiful male Wood Duck, swimming in the water of the Souadavabscook Stream, only a few feet from me. This was only a mile from my home, on the main road. We live five miles below Bangor, on the Penobscot River, and Hampden is a summer resort of the city, with electric cars and hundreds of autos.—Norman Lewis, *Hampden, Maine.*

Evening Grosbeaks and Others at a Michigan Feeding-Station

Early in December, 1915, within 25 feet of our dining-room window, I put up two feeding-booths and, attached to the window-sill, a feeding-tray. These I kept supplied with sunflower seeds; in addition I put up three small wire baskets and kept them filled with suet. At first I could attract nothing but House Sparrows, with now and then a Chickadee. I purchased a little .22 shotgun and got after the Sparrows, during December killing

twenty-five. Our dining-room window faces west, and the house is on the north slope of a hill, so I very soon decided that, with no evergreen trees near the house and everything open to the sweep of the northwest winds, I would not get many birds to come to feed. To obviate this, I went to the woods about a mile out of town and cut down some twenty-five small spruce and balsam trees, 12 to 18 feet in height. These I had brought in and built a thicket, using heavy tarred marline to hold the evergreens in place and fastening to a number of small wild cherry trees.

This was late in December, but by January 1st I had a small flock of Chickadees living in the thicket, and daily visits from four Blue Jays and one female Downy Woodpecker. In January I shot fifteen more Sparrows. This seemed to discourage them, for during the balance of the winter I shot but ten more. By the middle of January the Blue Jays had increased to nine. Both Blue Jays and Chickadees were much more partial to sunflower seeds than to the suet; sometimes for several days at a time I did not see a bird touch the suet, but they were after the sunflower seeds all the time. Early in January a flock of over fifty Bohemian Waxwings appeared in the neighborhood, and were around until the end of April. They fed almost exclusively on thorn-apples. Several times they were in the trees near my feeding-booths, now and then flying to the ground and feeding on the sunflower seeds, but they did not seem to care for them enough to come regularly. In December a flock of Evening Grosbeaks was seen in town, and reported in various places from time to time. While at breakfast, February 18, I discovered one male and two females feeding on the snow under one of the feeding-booths. They stayed around all day; when not feeding, sunning themselves in some small wild cherry trees on the south side of the thicket. The next day two males and two females were here. By February 22 the number had increased to nine, and by the 25th to sixteen. March 3 there were twenty-four—sixteen males and eight females. For some time this was about the number feeding daily, but toward the end of March it seemed to me there must be more, for they were devouring the sunflower seeds at a very rapid rate. April 1 the trees were full of them, and by actual count there were fifty-one birds, about two-thirds males. For two weeks after their first appearance, they fed only from the ground, but one day I noticed one of them feeding from one of the feeding-booths. The next day they were feeding from both booths and a couple of days later they visited the feeding-tray at the window. After that you could seldom look out without seeing both the booths and the tray occupied. They had the Blue Jays quite subdued and would drive them out of the feeding-booths at any time they so desired. They got to be quite tame; frequently while I was filling one booth they would feed from the other not ten feet away. At the feeding-tray they were not disturbed, although frequently as many as five people would be standing at the window watching them, and not more than two to five feet away. While they were here, we never sat down to a meal by daylight that they were not in evidence. So many wanted to see them that we frequently invited people to luncheon, letting them set the day. The birds never disappointed us, but were always present as promised. At first the birds were very quiet, not a sound from them, but, as the flock increased in size, they became quite talkative, and from about the first of March they kept up a constant chatter. They arrived in the morning about six and left for the night at 3.30 to 4.30. I do not know where they stayed at night, but, from their flight, I judged in the woods about a mile southwest of town, where there are many protected ravines. March 28 a large flock of Redpolls visited us. That day at lunch we had the unusual sight of seventeen Redpolls, thirty Evening Grosbeaks and eighteen Bohemian Waxwings in the trees and on the ground, and all in sight from the dining-room window at the same time. Another unusual sight was on May 20

when a male Indigo Bunting, a male Evening Grosbeak, and a male Purple Finch were all feeding together from the window-tray. After the middle of May the number of Evening Grosbeaks began to diminish, the last two leaving May 29. Following is a list of the birds seen from the dining-room window, with the largest number of each seen at any one time, January 1 to June 1, 1916: White-breasted Nuthatch, 3; Red-breasted Nuthatch, 2; Chickadee, 8; Blue Jay, 9; Downy Woodpecker, female, 1; Bohemian Waxwing, over 40; Evening Grosbeak, 51; Canada Jay, 1; Redpoll, 28; Song Sparrow, 5; Robin, 11; Junco, 7; White-throated Sparrow, 14; Purple Finch, over 50; Golden-crowned Kinglet, 2; Brown Creeper, 1; Ruby-crowned Kinglet, 3; Yellow-bellied Sapsucker (pair), 2; Bronzed Grackle, 9; White-crowned Sparrow, 6; House Wren, 3; Chipping Sparrow, 13; Black and White Warbler, 2; Indigo Bunting, male, 1 (the only one I ever saw here); Redstart, 3; Yellow Warbler, 2; Flicker, 1; Myrtle Warbler, 4.

During the season I used 225 pounds of sunflower seeds, and incidentally I might mention the shooting of five cats.

P. S. I started feeding again October 13, and since then Juncos, White-throated Sparrows, Purple Finches and Blue Jays have been feeding daily. Today, October 22, at noon, the first Evening Grosbeak, a male, returned, and flew immediately into one of the feeding-booths.—M. J. Magee, *Sault Ste. Marie, Mich.*

Winter Notes from British Columbia

I notice that you remark, in the 1915 Christmas Census, that there were no records of the Pine Siskin. Had there been more observers in Washington and Montana, possibly some would have been recorded, but there surely were enough Pine Siskins around the Shuswap Lake to make one think they had gathered there from all the North American continent. Where I live, at the head of the Seymour arm of Shuswap Lake (about 130 miles north of the international boundary), every settler's cabin had its flock of from twenty to fifty, usually accompanied by ten or fifteen Crossbills, the latter in all shades of plumage from green to red. I saw only two White-winged Crossbills, the only ones I have ever seen in this district. All that the birds seemed to want was salt and gravel, and when and where they fed I do not know, as they were around the cabins at all times of the day. They would not touch dry salt, but ate the snow where dish-water had been thrown out. I poured brine over a half-rotten birch stump, and by spring they had eaten half the stump away.

It was a very severe winter with us, but the Siskins and Crossbills did not seem to suffer any. The lake was frozen ten to eighteen inches, and the snow lay three feet deep. The birds would come into the woodsheds to get sand and gravel, and were quite fearless. After the ice melted, I came down the lake a distance of thirty-odd miles, and noticed Siskins everywhere along the shores; and they are still much in evidence at the end of April. Every family around the lake tells me that they had a flock with them all winter.

During the winter of 1912–13 Pine Siskins were just as numerous with us, but no Crossbills came; this was also a severe winter. Some Siskins nested here that spring, 1913. The next winter there were Crossbills everywhere, but very few Siskins; Crossbills were never so numerous as Siskins had been. That was a mild winter, as was the winter of 1914–15, when Crossbills and Siskins were here in more equal numbers, but neither at all numerous.

Strange to say, this past winter, the most severe in ten years, I had a Varied Thrush and a Song Sparrow at my cabin all winter. It was the first time I had seen a Varied Thrush here later than November. The poor thing suffered severely during the zero weather, but with a little help survived, yet would never get at all tame. The spring arrivals, Robin, Bluebird, and Junco, arrived on time; my records for these three birds for four springs are all within two days of being the same.

In other winters, flocks of Chickadees (two kinds), Kinglets and Nuthatches, with an occasional Creeper, passed my cabin every three or four days; but this last winter I saw only two such flocks, and they were small ones.—Stanley Boys, *Seymour, B. C.*

Mockingbirds Nesting in Massachusetts

A pair of Mockingbirds have this summer (1916) nested in the Catholic Cemetery of Greenfield, Massachusetts. They now have one young bird out of the nest. This is the first record I have seen of Mockingbirds being in this state, with the exception of one seen this spring in the Arboretum at Jamaica Plain. If anyone has seen others, I should be interested to see the record of them in these notes.—Mabel Comstock, *Greenfield, Mass.*

[The Mockingbird is known to breed rarely in Massachusetts, as well as to be an occasional visitor at all seasons, especially in the Boston park system, where one or two individuals usually winter.—Ed.]

Rough-winged Swallows in Essex County, Mass.

On May 21, 1916, three members of the Brookline Bird Club, Mr. Charles Floyd, Mr. Barron Brainerd and the writer visited Ipswich, Mass., for bird study. During the trip seventy-four species were observed, and a few notes of the trip may be of interest.

Ipswich is in Essex County, which forms the northeastern corner of Massachusetts. Its bird-life has been covered very thoroughly in the "Birds of Essex County," by Dr. Charles W. Townsend. The town itself lies on both sides of the Ipswich River, where fresh water meets the tides from Ipswich Bay. Much of the town is rolling farm lands, with some mixed woods, and at the east broad areas of salt marsh, protected from the ocean by wide beaches, sand dunes, and a few rounded hills of glacial origin.

Most of the land birds listed were found while passing through the town, our objective being the beaches and possible migrating shore-birds. Our first visit was to Clark's Pond, an interesting little body of fresh water separated from the salt water of Plum Island Sound by a very narrow strip of shore. Here in favorable seasons many shore-birds are found, but the exceptionally wet spring left no muddy border to the pond, and only a few sandpipers and about a dozen Night Herons were seen. Many swallows were hawking low over the water, however, and a brief observation caused Mr. Brainerd to exclaim, "Rough-winged Swallows!"

As these birds have never been reported from Essex County, to the best of my knowledge, we watched them very carefully. There were apparently only two birds of this species, though there were many Barn and Cliff Swallows, and a few of the smaller Bank Swallows, flitting over the pond and the swampy field adjacent. The Rough-wings hawked over a regular beat, coming down a swampy gully, out over an arm of the pond, faced the wind on the pond for a few minutes, then flew back over the pasture to the head of the gully, and repeated the maneuvers. By stationing ourselves in the gully, we had excellent opportunities to study the birds at short range.

The even brown of the birds' backs first attracted Mr. Brainerd's attention, he being familiar with the birds at Williamstown, Mass., at the opposite end of the state. The wings of the Bank Swallows are darker than the back, when seen in flight with a good light, while the Rough-wing shows all one shade of brown. As the birds flew over, the brownish throat was also plainly seen, shading off over the breast into the white of the belly, while the white throat of the Bank Swallows was very conspicuous in comparison. The birds hunted together and probably were mated, but no nest was found.

On the high glacial hill overlooking the pond the Prairie Horned Larks were nesting, and some time was spent lying on our backs there, listening to the brief but frequently repeated flight-song, as the

birds hovered high over us, almost stationary against the blue.

Later a visit was made to the dunes near the lighthouse, across the Ipswich River. Approaching across the edge of the salt marsh, Bitterns and Green Herons were seen, and a single Sharp-tailed Sparrow, sneaking through the short grass with some Savannah Sparrows. Crossing the dune country, about sixty Black Ducks and one female Mallard were flushed from a small pond, and as we approached the outer line, near the beach, an immature Bald Eagle rose from a hollow. Immediately some Crows gave chase, following him down across the dunes, and then back up the beach. As we ran forward to get a better viewpoint, another immature Eagle rose from the drift on the beach at high water mark, and made off in leisurely flight after the first bird.

A flock of twenty-five Black-bellied Plover, one Ruddy Turnstone and a number of Sanderlings were running along the edge of the beach very near where the second Eagle had been, and apparently paid no attention to the Eagles. More Sanderlings, and Least and Semipalmated Sandpipers, were seen, and, as the afternoon waned, Herring Gulls began flying across the dunes toward the salt marshes, a brace of Black Ducks returned to one of the little ponds among the dunes, a few Red-breasted Mergansers and a pair of Surf Scoters passed by off-shore, and one of the Eagles sailed slowly back with his retinue of noisy Crows.

A list of the birds seen during the day is as follows: Herring Gull, Red-breasted Merganser, Mallard, Black Duck, Surf Scoter, American Bittern, Green Heron, Black-crowned Night Heron, Least Sandpiper, Semipalmated Sandpiper, Sanderling, Spotted Sandpiper, Black-bellied Plover, Ruddy Turnstone, Pheasant, Red-shouldered Hawk, Bald Eagle, Sparrow Hawk, Kingfisher, Northern Flicker, Chimney Swift, Ruby-throated Hummingbird, Kingbird, Phœbe, Least Flycatcher, Prairie Horned Lark, Crow, Bobolink, Cowbird, Red-winged Blackbird, Meadowlark, Starling, Baltimore Oriole, Bronzed Grackle, Purple Finch, Goldfinch, Vesper Sparrow, Savannah Sparrow, Sharp-tailed Sparrow, Chipping Sparrow, Song Sparrow, Swamp Sparrow, Towhee, Rose-breasted Grosbeak, Indigo Bunting, Scarlet Tanager, Cliff Swallow, Barn Swallow, Tree Swallow, Bank Swallow, Rough-winged Swallow, Red-eyed Vireo, Warbling Vireo, Yellow-throated Vireo, Blue-headed Vireo, Black and White Warbler, Golden-winged Warbler, Nashville Warbler, Tennessee Warbler, Northern Parula Warbler, Yellow Warbler, Black-throated Blue Warbler, Chestnut-sided Warbler, Blackburnian Warbler, Black-throated Green Warbler, Pine Warbler, Ovenbird, Maryland Yellow-throat, Catbird, Chickadee, Wood Thrush, Wilson's Thrush, Robin, Bluebird.—John B. May, M.D., *Waban, Mass.*

Warblers Breeding about Atlanta, Ga.

For a number of years I have believed that the southern breeding-range of many of our birds could be considerably extended if there were more ornithologists in the South at once competent and able to spend much time in the field. This view was strengthened today when I was re-reading Chapman's 'The Warblers of North America', and noted the limits set to several species, qualified by the exception that rarely and locally the summer habitat was extended. I am satisfied that several Warblers breed much more commonly in Georgia than was formerly supposed.

There is a large tract of woods on the outskirts of Atlanta which is peculiarly rich in bird-life, and seldom can more breeding Warblers be found in an equal area. Prof. D. C. Peacock lives within walking distance of this woodland, and has spent much time there during recent years, and several times I have gone with him to verify discoveries or to see with my own eyes birds or nests already positively identified. Within this tract the following Warblers breed:

Black and White Warbler. One nest found; others unquestionably breed there.

Worm-eating Warbler. No nest found, but several pairs seen every month from April to August.

Blue-winged Warbler. At least six pairs. No nest located, but young scarcely able to fly seen twice.

Cerulean Warbler. I have looked in vain for a nest, but several pairs sing here throughout the summer, and are as conspicuous as this species could be expected to be.

Yellow-throated Warbler. Common.

Pine Warbler. Common.

Prairie Warbler. Several pairs nest in second growth around clearings.

Louisiana Waterthrush. One nest; several pairs breed.

Kentucky Warbler. Twenty pairs breeding would be a conservative estimate.

Florida Yellowthroat. Common.

Yellow-breasted Chat. Common.

Hooded Warbler. Abundant; three nests seen in one day.

American Redstart. One nest found; several birds seen throughout breeding season.

Besides the thirteen species in this woodland, the Yellow Warbler breeds elsewhere around Atlanta, and the Parula is seen occasionally through the summer, but no nest has been located. Swainson's Warbler is said to nest in canebrakes near the city; but I know of no nest's being found, and personally have not seen it after May 15.

I feel sure you would be interested in this information about the Blue-winged, Worm-eating, Cerulean, and Redstart, and perhaps in the great abundance of the Kentucky.—Wm. H. LaPrade, Jr., *Atlanta, Ga.*

A Census of Forty Acres in Indiana

The bird population varies in our locality from year to year. This year (1916) there are absent many birds that formerly nested about our homestead, namely: Killdeer, Belted Kingfisher, Phœbe, Orchard Oriole, Vesper Sparrow, Song Sparrow, Indigo Bunting, Scarlet Tanager, Barn Swallow, Cedar Waxwing, Vireos, Worm-eating Warbler and Yellow-breasted Chat. Our homestead is near the forest on the east, with orchards to the north and south and open pasture to the west. The following birds have nested within an area of forty acres:

Species	Number of Pairs
Bob-white	4
Mourning Dove	4
Screech Owl	1
Yellow-billed Cuckoo	1
Downy Woodpecker	1
Red-headed Woodpecker	1
Northern Flicker	1
Chimney Swift	2
Ruby-throated Hummingbird	2
Kingbird	1
Crested Flycatcher	1
Wood Pewee	2
Blue Jay	6
American Crow	1
Meadowlark	6
Baltimore Oriole	1
House Sparrow	5
Chipping Sparrow	1
Cardinal	2
Summer Tanager	1
Purple Martin	1
Catbird	1
Brown Thrasher	2
House Wren	1
Carolina Wren	1
Tufted Titmouse	1
Chickadee	1
Wood Thrush	1
Robin	3
Bluebird	2

Total, 30 species, 58 pairs.

—Martha Waters, *Owensville, Ind.*

Is This a Record with Bluebirds?

In April Bluebirds appeared. I noticed two on a Friday afternoon in a young maple close to the house, and that evening prepared a small nest-box with an entrance-hole of suitable size. The following morning at seven-thirty, aided by a ladder, I tied the box against the maple's trunk about twelve feet from the ground.

One of the Bluebirds appeared while I was in the tree and actually lit on the second limb above me to watch the work; before I could take the ladder away the bird was perching on the box and no sooner was the ladder removed than it was inside. When the man who drove me to the station returned at eight-twenty,

there were straws sticking out of the entrance.

Incidentally, let me say, the birds raised a brood which left about June 1; then they fixed the house up for a second family and in several days were incubating the eggs. It seems easy to get a good tenant if you offer him a good home.—Joseph W. Lippincott, *Bethayres, Pa.*

Bird Rest-Perches on Lighthouses

Bird-Lore is glad to publish the appended letter to the Editor from Miss L. Gardiner, Secretary of The Royal Society for the Protection of Birds.

"Dear Sir, I have read with much interest Mr. Grant's article [in the September-October Bird-Lore] on the 'Protection of Migrating Birds in England,' but, in justice to this Society, I shall be glad if you will note a few corrections in the next number of Bird-Lore. Mr. Thijsse did not 'induce the British Government' to erect perches at any of our lighthouses: the Government, first to last, has had nothing to do with the matter. Nor has the 'Bird Protective Association' its headquarters at Trinity House.

"The whole initiative was taken by The Royal Society for the Protection of Birds, to whom information was kindly supplied by Mr. Thijsse and Mr. Burdet. The whole expense is borne by the Society. The Master and Elder Brethren of Trinity House received a deputation from the Society, consented to rests and perches being erected under the superintendence of their engineers and by their workmen, and have shown sympathetic interest throughout. But the bills are defrayed by the Society. After the war, we hope to extend the work to other lighthouses, as its success is unquestioned.

"Yours very faithfully,

L. Gardiner."

Reports received from lighthouse keepers and forwarded to the Society from Trinity House continue to show that the bird-rests and perches erected for the shelter and protection of birds on migration are entirely satisfactory in their results. Instead of flying against the lantern and fluttering round and round the bewildering light, the birds now cluster upon the rests, satisfied to be within the beams of light, and there remain until the dawn of day enables them to find their way over sea and land. On hazy and misty nights the use of the rests is most fully demonstrated, as it is on such nights that the destruction was formerly greatest.

The Principal Keeper at the Caskets writes, November 2:

"A great number of birds have used the perches during the month of October, especially on the night of the 16th, when they were absolutely covered throughout the night."

To this the Keeper-in-Charge adds, November 30:

"The perches have been made good use of by the smaller birds, and saved numbers from killing themselves by flying around and striking the glazing; now they settle on the perches."

From the Spurn Lighthouse (Yorkshire) and the South Bishop (Pembroke), comes similar testimony; while the Keeper of St. Catherine's (Isle of Wight) writes:

"From close observation made during the time the perches were in position there is not the slightest doubt that they are of great value in saving the lives of birds during migration, as it is now a very rare occurrence to pick up any dead birds."

As soon as the declaration of Peace makes further work of the kind possible, the Society hopes to proceed to equip other lighthouses, with the permission and coöperation of the Master and Elder Brethren of Trinity House, and by the aid of subscriptions from those interested in work which appeals so strongly to lovers of birds and to a sea-going people.

Extracts from the Annual Report of the R. S. P. B. 1915.

Thirty-fourth Congress of the American Ornithologists' Union

The thirty-fourth Annual Congress of the American Ornithologists' Union was held at the Academy of Natural Sciences, Philadelphia, November 13–16, 1916. The Congress was largely attended and the courtesies extended the visiting members by the Academy of Sciences and the Delaware Valley Ornithological Club in addition to the attractions of an unusually interesting program made it one of the most enjoyable in the history of the Union.

At the business meeting of Fellows and Members the existing officers of the Union were re-elected and the following Members were elected Fellows: James H. Fleming, Toronto, Canada; Harry S. Swarth, Berkeley, California; W. E. Clyde Todd, Pittsburgh, Pennsylvania.

The following were elected Honorary Fellows: Sergius Alexandrovich Buturlin, of Wesenberg, Esthonia, Russia; Prof. Dr. Max Fürbringer, Heidelberg, Germany; Dr. Hans Friedrich, Gadow, Cambridge, England.

The Corresponding Fellows elected were: Wm. L. Abbott, Philadelphia, Pa.; David Armitage Bannerman, London, England; Dr. Valentine Bianchi, St. Petersburg, Russia; Dr. Roberto Dabbene, Buenos Aires, Argentina; Alwyn Karl Haagner, Pretoria, South Africa; Robert Hall, Hobart, Tasmania; Dr. Einar Lönnberg, Stockholm, Sweden; Dr. Percy R. Lowe, Windsor, England; D. Auguste Ménégaux, Paris, France; Harry Forbes Witherby, Hampstead, England.

There were also elected 167 Associate Members.

PROGRAM

In Memoriam—Daniel Giraud Elliot. Dr. Frank M. Chapman, New York, N. Y.

In Memoriam—Wells Woodbridge Cooke. Dr. T. S. Palmer, Washington, D. C.

A New Name for an Old Friend. Harry C. Oberholser, Washington, D. C.

The Life and Writings of Professor F. E. L. Beal. W. L. McAtee, Washington, D. C.

Bird Migration in Central Africa. James P. Chapin, New York, N. Y.

Bird Casualties. Mrs. E. O. Marshall, New Salem, Mass.

Meadowlark Duets. Illustrated by whistled songs of Meadowlarks. Henry Oldys, Silver Springs, Md.

Woodcraft and Sparrow-proof Bird Boxes. Ernest Thompson Seton, Greenwich, Conn.

In Audubon's Labrador. Illustrated by lantern-slides. Dr. Chas. W. Townsend, Boston, Mass.

Photographing Gulls at the Panama-Pacific Exposition. Illustrated by lantern-slides. Joseph Mailliard, San Francisco, Cal.

Concerning Bird Banding. Illustrated by lantern-slides. Howard H. Cleaves, New Brighton, N. Y.

What Determines the Length of Incubation. Dr. W. H. Bergtold, Denver, Col.

A Review of the Diving Petrels (Pelecanoididæ). Robert Cushman Murphy, Brooklyn, N. Y., and Francis Harper, Washington, D. C.

Exhibition of Hybrid Ducks, with Comments. Louis Agassiz Fuertes, Ithaca, N. Y.

Notes on some British Guiana Birds. C. William Beebe, New York, N. Y.

Attempts to record with the camera the food of some native birds. Illustrated by lantern-slides. Edward Howe Forbush, Boston, Mass.

The Home Life of our Common Birds. Illustrated by motion pictures. Herbert K. Job, West Haven, Conn.

Some problems with every day Birds. Illustrated by lantern-slides. Dr. Arthur A. Allen, Ithaca, N. Y.

The Gannets of Bonaventure Island, Gulf of St. Lawrence. Illustrated by motion pictures. Percy A. Taverner, Ottawa, Canada.

Home Life of Various Minnesota Birds. Illustrated by motion pictures. Thomas S. Roberts, M.D., Minneapolis, Minn.

Bird Reservations of the Gulf Coast. Illustrated by motion pictures. Herbert K. Job, West Haven, Conn.

Bird Study and Life. W. Leon Dawson, Santa Barbara, Cal.

Geographical Distribution of Color in the Genus *Junco* and its Significance as a Test of Species. Jonathan Dwight, M.D., New York, N. Y.

The Shedding of Stomach Lining by Birds, particularly as Exemplified by the Anatidæ. Illustrated by lantern-slides. W. L. McAtee, Washington, D. C.

Notes on Long Island Birds. Robert Cushman Murphy, Brooklyn, N. Y., and John Treadwell Nichols, New York, N. Y.

Field notes on *Chunga burmeisteri*. Howarth S. Boyle, New York, N. Y.

Some Relationships of the North American Passeres. Spencer Trotter, M.D., Philadelphia, Pa.

Personalia in Ornithology—Report of the Committee on Biography and Bibliography. Dr. T. S. Palmer, Washington, D. C.

Birds of the Athabaska and Great Slave Lakes Region. Illustrated with lantern-slides. Francis Harper, Washington, D. C.

Our Eastern Flycatchers and their Nesting Sites. Illustrated by lantern-slides. William L. Baily, Philadelphia, Pa.

Washington Coast Bird Reservations. Lynds Jones, Oberlin, Ohio.

Remarks on Certain Woodpeckers. W. DeWitt Miller, New York, N. Y.

Bird Day in the Querigua Forest, Guatemala. By Samuel N. Rhoads, Haddonfield, N. J.

An Ornithological Reconnaissance in South America. Frank M. Chapman, New York, N. Y.

The Nesting of the Cock of the Rock. Leo E. Miller, New York, N. Y.

Book News and Reviews

The Natural Enemies of Birds. By Edward Howe Forbush, State Ornithologist. Massachusetts State Board of Agriculture Economic Biology Bull. No. 3. Boston, 1916. 58 pp., 7 pls.

In these days when the evil conceptions of the English game-keeper are spreading all too rapidly in our land, this wholly sane and rational treatise should receive the careful attention of all interested in the subject, especially all park commissioners, game-breeders and others who have it in their power to affect the numbers of the enemies of birds. Mr. Forbush describes concisely both the harm and the good done by hawks, owls, crows, jays, skunks, weasels, snakes, and many other creatures, taking up each in turn. He brings sound, practical, utilitarian reasons to the defense of the same position taken chiefly on esthetic grounds by the present reviewer in his notice in the last Bird-Lore of another recent Massachusetts publication. The conclusions reached are "that (1) natural enemies of birds are necessary and desirable, as they tend to maintain within proper bounds [and at a high standard of fitness] the numbers of species on which they prey; (2) organized attempts to increase the numbers of birds over large areas by destroying indiscriminately all natural enemies are undesirable; (3) under certain circumstances, enemies which have been able to adapt themselves to man and his works and have become unduly numerous may require reduction in numbers; (4) individuals of useful species which may become particularly destructive should be eliminated; (5) . . . . bounty laws . . . in most cases are pernicious." Interesting examples are given of the complicated and delicate balance naturally obtaining among wild things. For instance, mice, when kept at normal numbers, are useful as furnishing food to creatures that would in their absence prey more on birds, but mice themselves have tremendous potential powers of destruction, so that, while mice and their enemies are both enemies of birds, the extermination of either would be disastrous to agriculture.

Mr. Forbush seems somewhat off the track in certain statements concerning snakes. In speaking of the Hog-nosed Snake, "the so-called spreading adder or blowing viper (*Heteredon platirhinos*)" Ditmars says, "The food of this snake seems limited to frogs and toads" ('The Reptile Book,' page 382). The African Egg-eating Snake uses for breaking egg-shells the lower spines of a series of about thirty vertebræ. These project into the esophagus, not the stomach, and are, of course, not true teeth, though tipped with enamel. (Lydekker, 'The Royal Natural History,' V, page 214).

It is to be hoped that everyone practically interested in bird-protection will study carefully the whole of this bulletin, for "there is danger that we shall overdo the destruction of so-called vermin and thereby bring about serious consequences."—C. H. R.

Food Plants to Attract Birds and Protect Fruit. By Edward Howe Forbush. Massachusetts State Board of Agriculture Circular No. 49. June, 1916. 21 pp.

Anyone who has the superintendence of the planting of a park or a country place, large or small, would do well to choose shrubs, trees, and vines that are at once ornamental and productive of fruits that will attract birds; and anyone who grows cherries and berries for human consumption should know the established fact that he can protect them from birds by having nearby wild fruits, such as mulberries, that the birds prefer. To help in the selection of plants for both these purposes is the object of this pamphlet. It is largely a compilation, reprinting lists published in Farmers' Bulletin No. 621 (by W. L. McAtee of the Biological Survey), entitled 'How to Attract Birds in Northeastern

United States,' and in BIRD-LORE for July-August, 1912 (by F. H. Kennard), with many additional notes and comments by Mr. Forbush.

As slight addenda, the reviewer might mention that the flowers of the American beech (*Fagus americana*) are eaten greedily by Purple Finches, that beechnuts are said to be a favorite food of the Red-headed Woodpecker, and that he knows the pin oak (*Quercus palustris*) to have an important influence on the presence of Red-headed Woodpeckers and Tufted Titmice, and that the alders (*Alnus incana* and *A. rugosa*) are a winter attraction for Redpolls.

The pamphlet closes with instructions as to what to do and what not to do in planting and setting out seeds and plants. —C. H. R.

SECOND ANNUAL REPORT OF BIRD COUNTS IN THE UNITED STATES, WITH DISCUSSION OF RESULTS. By WELLS W. COOKE, Assistant Biologist. Bull. No. 396, U. S. Dept. of Agriculture. 20 pp., 1 map.

The report of the first season of this work (Preliminary Census of Birds of the United States, U. S. Dept. of Agriculture Bull. No. 187), also by Professor Cooke, was reviewed at length, and its objects and value discussed, in BIRD-LORE last year (Vol. XVII, No. 2, p. 136). The counts of 1915 on farms in the northeastern states "make it practically certain that the conclusions drawn as to the numbers of birds on these farms is very nearly accurate." These conclusions are that there is an average of 124 pairs of birds on the average farm of 108 acres.

"On farms where counts were made in that part of the Plains region east of the one hundredth meridian and in the whole of the southern states, for the part of the farm surrounding the farm home there is almost exactly the same density of bird-population—for the former, 125, and for the latter, 131 pairs of nesting birds to each 100 acres—but the counts so far received do not furnish a sufficient basis for estimating the birds on the remainder of the farm.

"The data received tend to indicate that the western part of the Plains, the Rocky Mountain region, and the Pacific slope contain a smaller number of birds per acre than the eastern states, but as yet no numerical statement may be attempted." As an example of the effect of irrigation may be mentioned two reports from western Colorado: "The irrigated land supported a bird-population at the rate of 66 pairs to 100 acres, while on the contiguous non-irrigated land the bird-life shrank to 5 pairs to 100 acres.

"The further counts made in 1915 emphasize the statement of a year ago, that birds are too few on the farm and that their numbers may be largely increased by protection and a little care in furnishing natural food and shelter. A bird-population of 70 pairs of native birds of 31 species on 8 acres, at Olney, Ill.;* 135 pairs of 24 species on 5 acres at Wild Acres, Md.†; 192 pairs of 62 species on 44 acres, at Indianapolis, Ind.‡; and 189 pairs of 40 species on 23 acres, at Chevy Chase, Md., a half-acre of which showed 20 pairs of 14 different species, all indicate how largely birds will respond to food, shelter, and protection."

It is probable that this work will be continued in 1917, and, if so, all who can will be urged to take part in it, but it should be remembered that each enumerator should "be able to identify with certainty all the birds nesting on the area he covers, or be able to give a recognizable description of those he is unable to name." —C. H. R.

The Ornithological Magazines

THE AUK.—The October issue opens with an annotated list, by Mr. S. F. Rathbun, of 'The Birds of the Lake Crescent Region, Olympia Mountains, Washington.' The half-tones showing views of the country are of unusual excellence. There is also a list by Mr. R. F. Hussey, 'Notes on Some Spring Birds of La Plata,' and one by Mr. A. Wetmore on 'The Birds of

*See BIRD-LORE, XVII, 1–7, 91–103, January–April, 1915.

†The 1915 record for *density* of population; see BIRD-LORE, XVII, 77–84, March–April, 1916.

‡Much the highest record in *variety*.

Vieques Island, Porto Rico.' These 'extralimital' contributions are welcome and give us a glimpse of bird-life beyond our boundaries in the West Indies and further south in Argentina.

In a paper on the 'Migration of the Yellow-billed Loon' by Mr. J. Dixon, the author states that "careful analysis of the various Alaskan records of the Yellow-billed Loon do not disclose any definite or authoritative information as to breeding-habits or habitat." This will be a blow to collectors who own sets of eggs supposed to be of this species.

Mr. A. H. Norton in 'Notes on Some Maine Birds' adds some new records to the state list, and Mr. G. D. Hanna contributes 'Records of Birds New to the Pribilof Islands Including Two New to North America,' the latter being the European Goldeneye and the Brambling.

Mr. J. H. Fleming under the title of 'The Saw-whet Owl of the Queen Charlotte Islands' describes *Cryptoglaux acadica brooksi*, and Mr. J. C. Phillips describes a new goose, *Chlæphaga hybrida malvinarum* from the Falkland Islands.

Little need be said here concerning a list of 'Changes in the A. O. U. Check-List of North American Birds Proposed Since the Publication of the Sixteenth Supplement.' The list is merely a compilation of *proposed* changes and everybody is invited to throw verbal bricks at it to enable the Nomenclature Committee to judge better the value of the names for incorporation in a new Check-List to be published some day in the future.

Some of us will be surprised to find among 'General Notes' at page 434 a record of a flock of fifty Eskimo Curlew seen in Massachusetts, near Ipswich, May 17, 1916. As there are practically no spring records of this species for Massachusetts, even when the birds were most abundant, this sight record, on hearsay evidence and that at a time when the species is apparently near extinction, may well be questioned.—J. D.

The Condor.—The September number of *The Condor* contains six general articles, half of which are local lists. Pierce publishes 'More Bird Notes' on 14 species observed in Big Bear Valley in the San Bernardino Mountains, Tyler adds 'Supplementary Notes' on 33 species in the Fresno District, making 194 species now known from this region, and Mailliard contributes notes on 7 species observed in the vicinity of Humbolt Bay in May and June, 1916.

The second installment of Mrs. Bailey's delightful paper on 'Meeting Spring Half Way' describes a 'cross-country drive made in April, 1900, from Corpus Christi, Texas, to the Rio Grande.

'A Hospital for Wild Birds,' a unique institution maintained by Dr. W. W. Arnold at Colorado Springs, Colo., is described by the owner, who has erected a commodious aviary for the accommodation of crippled birds brought in by the children of the neighborhood. After a heavy hailstorm in July, 1915, forty-five injured Robins and fifteen miscellaneous birds were received for treatment. An American Bittern which had been shot in the wing and had lost half of the upper mandible proved an interesting patient and lived for several months until "his appetite began to fail and he died of inanition."

In 'Notes on the Golden Eagle in Arizona,' Willard mentions two instances in which the birds were found feeding on carrion and were so sluggish that they were captured with ease by men on horseback.

Among the brief notes are several important records of sea-birds including one of a Pomarine Jaeger (*Stercorarius pomarinus*) on San Francisco Bay, May 15, 1916, and one of a Long-tailed Jaeger (*S. longicaudus*) at Hyperion, Los Angeles Co., January 26, 1916. The latter is said to be the second record of this species on the California coast south of Monterey Bay and the seventh for the state. Still more interesting is a note by C. I. Clay on the breeding in 1916 of the Fork-tailed Petrel on Whaler Island, near Crescent City, and on Sugar Loaf Rock at Trinidad, Cal.—T. S. P.

Bird-Lore

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Bird-Lore's Motto:
A Bird in the Bush Is Worth Two in the Hand

CONTINUING our outline of the work of the American Museum's expedition in South America (See the two preceding numbers of BIRD-LORE), after completing our reconnaissance in the Urubamba Valley of Peru, we were resident for a short time at Tirapata, on the 'puna' or tableland of that country, about forty miles north of Lake Titicaca, at an altitude of 12,500 feet. The country is treeless, indeed without a vestige of arborescent vegetation; nevertheless, Passeres, which here could not very appropriately be called 'perching birds,' were abundant.

Sparrows and Pipits, for example, we know are terrestrial, but we do not think of Flycatchers as living on and near the ground, and, stranger still, we should not expect to find Woodpeckers where there are no woods.

However, several species of Flycatchers were common at Tirapata and a Flicker was one of the most characteristic birds of the region. While differing in color from both our North American Flickers, the Peruvian bird resembles them in general pattern, and is unmistakably a true member of the genus *Colaptes*. It has the white rump and the bounding flight of our species, but its notes would not be recognized as those of a Flicker, and it nests, like a Kingfisher, in holes in banks.

The presence of a Flicker in South America is one of the thousand and more problems which puzzle the brains of the zoölogical geographer. The genus is not found north of Peru nor south of Guatemala. Why it should be nesting in the intervening region, who can say? But we may be sure that a Woodpecker was never evolved in a treeless region, and hence we conclude that *Colaptes* is a comparatively recent arrival in the Andean tableland.

Certain lagoons near Tirapata were thronged with water-fowl of many species. There were Ducks, Geese, Coots, Gallinules and Grebes, and, more surprising even than the occurrence of Flickers, was the presence of large numbers of Flamingoes. We are so accustomed to think of these birds as inhabitants of the tropics that it is difficult to believe they are permanent residents of the upper Temperate Zone where frost, snow and ice are found in half the months of the year.

Leaving Tirapata, the expedition visited La Paz, Bolivia to establish relations with the authorities of the national museum of that city. From this point Mr. Cherrie went directly to Buenos Aires and thence ascended the Paraguay River to continue the work begun when he was a member of the Roosevelt Expedition, while the writer returned to the Pacific Coast at Arica and sailed from this point to Valparaiso. While not so abundant off the coast of Chile as off the Coast of Peru, birds were seen in great numbers between Arica and Valparaiso harbor, where a small Penguin was one of the most common species. The Museums of Santiago, Mendoza, Buenos Aires and Rio Janeiro all were found to contain much valuable material, and through the kind assistance of officers of these institutions opportunities were given to study, not only the specimens under their charge, but living birds in the surrounding country.

The most productive trip of this kind was made to the Organ Mountains west of Rio Janeiro, where remains were found of the Subtropical fauna, which once, no doubt, was highly developed in this now much-eroded mountain system.

In returning to the United States, two weeks were passed in Barbados, and some interesting data secured concerning the migration of shorebirds.

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the Editor, 67 Oriole Avenue, Providence, R. I.

The Winter Robin

Sursum corda

Now is that sad time of the year
When no flower or leaf is here;
  When in misty Southern ways
Oriole and jay have flown,
And of all sweet birds, alone
  The robin stays.

So give thanks at Christmas-tide:
Hopes of spring-time yet abide!
  See, in spite of darksome days,
Wind and rain and bitter chill,
Snow, and sleet-hung branches, still
  The robin stays!

The woodland silence, one time stirred
By the soft pathos of some passing bird,
  Is not the same it was before.
The spot where once, unseen, a flower
Has held its fragrant chalice to the shower,
  Is different for evermore.
    Unheard, unseen,
    A spell has been!

—Excerpt from "Seeming Defeat."

So in her arms did Mother Nature fold
Her poet, whispering that of wild and sweet
Into his ear—the state-affairs of birds,
The lore of dawn and sunset, what the wind
Said in the tree-tops—fine, unfathomed things
Henceforth to turn to music in his brain:
A various music, now like notes of flutes
And now like blasts of trumpets blown in wars.

—Excerpt from "Elmwood."

NOTE: These brief quotations from Thomas Bailey Aldrich express—in delicate imagery and with a deep sense of the meaning of Nature—what many who come into real contact with the outside world *feel* but cannot describe. Even though this poet may not have known that the Jay is a permanent resident, he had observed it and had also found a Robin lingering to brave a New England winter; he had felt the spell of the Ice King from the North as well as the enfolding care of the great Earth Mother; the wind and birds and sun and the winter silences all spoke to him, in words which it was his gift to pass on to us in the music of poetry.—A. H. W.]

BIRDS' CHRISTMAS TREE

Center Bird Club of the Junior Audubon Class, Pepperell, Mass., December 20, 1915

A Christmas Tree for the Birds

THE Center Bird Club of the Junior Audubon Class of Pepperell, Mass., is one of four bird clubs organized in the spring of 1915 for the children, in different parts of the town. It consists of thirty members, and meets once a month. The Audubon leaflets have been given out each month and the children have done good work in coloring them, and have been interested in learning about each bird described. Bird walks have been taken in summer, nesting-, food- and shelter-boxes put up, and all the children pledged to protect the birds in every possible way.

During the Christmas holidays the children trimmed a tree for the birds on the lawn at Highledge (the home of one of the teachers). The tree looked very gay when finished, garlanded with strings of popcorn and cranberries and hung with red apples, baskets of cracked nuts and boxes of seed, topped off with a cheery little Santa Claus bearing a tiny flag that floated merrily in the wind.

The feathered guests appeared much interested in all the proceedings, attracted by food-boxes filled with seed and cracked corn, a hanging lunch-counter stocked with nuts and sunflower seeds for the special delectation of the Chickadees and Nuthatches, and suet and marrow-bones fastened on neighboring trees for the Blue Jays. It was a very jolly afternoon for both birds and children, although owing to illness and a rehearsal for a Christmas entertainment on that day, fewer Club members were able to be present than anticipated.—Annetta S. Merrill.

[A charming intimacy is created between children and birds when the latter are attracted to the former by means of such a symbol as the Christmas tree—not that the birds have any inkling of its significance, but because, indirectly, they become a part of the children's most cherished holiday. Everyone ought to be better and happier for celebrating Christmas, and birds can add much to the day's joy.

It would be a delightful innovation if local Audubon Societies set about helping the different schools in their vicinities arrange Christmas trees for the birds, as an introduction to feeding birds during the winter. A helping hand or bit of encouragement quietly given here and there accomplishes more, often, than a spasmodic entertainment or lecture. Audubon Societies have not done their whole duty when they have provided a few public lectures or distributed some hundreds of leaflets. Coming into personal contact with teachers and pupils is what counts most.—A. H. W.]

HOUSE-WARMING

Excerpt from Chapter XIII, 'Walden' by Thoreau.

"At length the winter set in in good earnest . . . and the wind began to howl around the house as if it had not had permission to do so till then. Night after night the geese came lumbering in in the dark with a clangor and a whistling of wings, even after the ground was covered with snow, some to alight in Walden, and some flying low over the woods toward Fair-Haven, bound for Mexico. Several times, when return-

ing from the village at ten or eleven o'clock at night, I heard the tread of a flock of geese, or else ducks, on the dry leaves in the woods by a pond-hole behind my dwelling, where they had come up to feed, and the faint honk or quack of their leader as they hurried off . . . The snow had already covered the ground since the 25th of November, and surrounded me suddenly with the scenery of winter. I withdrew yet farther into my shell, and endeavored to keep a bright fire both within my house and within my breast."

[It is suggested that the entire chapter be read and the observations therein tabulated.—A. H. W.]

JUNIOR AUDUBON WORK

For Teachers and Pupils

Exercise XXX: Correlated with Music

BIRD-MUSIC

As I sit by the open fire, looking out on the oak trees which hold their green, glossy leaves so late into the fall, and to the west, on a vacant lot that is gorgeous with 'fire-grass' long after the brilliant sumac has faded and the goldenrod withered, almost indeed, until snow flies, I am suddenly aware that there is a great silence in Nature. The solitary Robin feeding on the lawn does not break forth into song, the Myrtle Warbler flits about the brittle shrubbery with an occasional and scarcely audible *chip*,—if it were not for the harshly musical call of the Blue Jay or the clear-cut note of a chance Woodpecker, the crystal autumn air would vibrate to few sounds beyond the fluttering, falling leaves. Birds fly by in flocks, but silently. It is their music that I miss. With what eagerness I waited day after day last spring for the coming of the Rose-breasted Grosbeak, haunted by the memory of its rich, sweet song! And now, another winter is ahead with seldom a bird-note to be heard, although my feathered mates do not entirely desert me. While it is so still and white without, what better time could there be to begin a study of bird-music?

It is rather a strange circumstance that many people who know a variety of land- and water-birds by sight, have little or no acquaintance with their voices. Something undoubtedly is out of focus in their training, for why should one deprive the ear in order to satisfy the eye? To be able to recognize a bird by note is a rare pleasure, besides being a fine accomplishment and one which leads into the subtler enjoyments of Nature. Let us take time now, when so profound a stillness prevails, to prepare for the great festival of spring.

An important fact to learn about bird-music is that it is not made up of irregular, indefinite sounds, but that it has pitch, rhythm, and tone-color and is capable of notation. This at once simplifies our task, for we are not confronted by an interminable sequence of unusual sounds, unrelated to our own system of music. Careful observation leads one to discover phrases and even

melodies in bird-music, so that there are familiar landmarks by which the beginner may proceed. It is difficult, indeed, to master all notes and songs of even our familiar birds, but not as difficult as it would be if they were detached and remote from any sounds to which we are accustomed in our own music, as the rasping notes of insects, the squeaking of mice, the wild howling of coyotes, or crackling and crashing of falling timber.

It is possible that one reason why birds so readily seem akin to us at times is on account of their musical calls and rhythmical songs. Some people find a relationship between tones and colors, and are able to learn the tones of the scale, for example, more readily by associating a color with each tone. Be that as it may, we can employ our time this winter to good advantage by learning to recognize the tones which make up the common scale of C, to understand what is meant by the *pitch* of each tone, to discover why certain tones are more resonant or *colorful* than others, and to train our ears to catch the *rhythm* of combinations of tones. Associated tones, we find, depend much upon *time* for the resulting rhythm, so we must learn to distinguish among the signs indicating the time. A note, for example, may be pitched upon middle C. It has, we will find, a degree of resonance depending upon the number of vibrations which underlie it, a degree that may be compared with other notes of different pitch and different vibration. This note on middle C may be combined with other notes in some sort of rhythmical sequence pleasing to the ear, especially if this sequence forms a true melody. Time, however, is one of the important factors in the making of any rhythm or melody, so we must look again at the note on middle C with which we started, to discover how much time it requires for its enunciation. It may be a whole note or a half-note, a quarter, an eighth, sixteenth, or even thirty-second or sixty-fourth. According to the time it consumes, it will be slow or fast.

One thing which is often confusing in bird-music is the rapidity with which many of the notes are uttered. A House Wren's song gushes forth in such an uncontrollable hurry that the ear fails at first to distinguish one note from another. With the White-throated Sparrow or Chickadee it is different. Their songs are given rather deliberately and are easy to follow and to recall.

The pitch of many bird-notes and -songs is higher than that of much of the music with which we are most familiar, or in some cases, lower, so that we need to make an effort to hear them readily. The low booming of Bitterns at a distance is as difficult for some people to hear as the high, wiry notes of the Grasshopper Sparrow. By training the ear with a tuning-fork to recognize pitch, one great obstacle in learning bird-songs will be overcome.

The matter of time-intervals between the rhythms making up a song is almost as important as that of the length of the actual notes. It is a particularly valuable training for the ear to recognize time-intervals. Compare the songs of three of our common Vireos, the Red-eyed, Yellow-throated, and Warbling. The Red-eyed Viroe's notes are pitched relatively high, are rapid

in enunciation, and are very distinctly grouped into separate rhythms or phrases by time-intervals of varying length.

The Yellow-throated Vireo sings at a somewhat lower pitch, its notes are given more slowly, and the two rhythms comprising its colorful, antiphonal song are separated by a strikingly long time-interval. The Warbling Vireo, unlike either of the others, weaves as it were, an almost unbroken circle of song, of varying pitch, rapidity, and rhythm. It is easy to recognize this song on account of its lack of time-intervals.

Turning to the four birds which it has been proposed that we study this coming year, namely, the Robin, Crow, Downy Woodpecker, and House Sparrow, we shall find that with regard to their notes and songs, there is much for us to learn. Any person who can at all times of the year and in all places recognize a Robin by its song, in reality knows a great deal about bird-music, for the Robin has a surprisingly varied number of notes and a rich song comparable with those of the best bird musicians.

The Crow seems to have far less song than its near relative, the Blue Jay, but it is capable of such a remarkable feat as actually talking, and when you have heard a Crow speak once I am sure you will never forget it. In the animal-house in Lincoln Park, Chicago, there lived for some years a tame, lame Crow which surprised many a passer-by by saying: "Holloa!" or "Popper!" Young Crows utter peculiar notes, quite deceptive to the untrained ear, while Fish Crows puzzle all except those who have made a thorough study of their calls.

The Downy Woodpecker, we know, is not a true song-bird, but it has a characteristic series of notes, dear to the ear of all who roam the woods, especially during those months when bird-music is at low ebb. As for the House Sparrow, it belongs to a family of remarkable singers, for the most part, and is itself capable of imitating the notes of some other birds, at least, certain House Sparrows kept with Canaries have been known to imitate the latter's songs. Occasionally one hears a musical twitter from a House Sparrow, quite different from its ordinary unpleasing chatter. Keep these birds in mind day by day.

It has been worth the while of several well-known students to make a study of bird-music, and as a result we have at our disposal some helpful books and lectures on this difficult subject. One new undertaking of interest is the publication of a collection of 'Bird-songs' and 'Flower-songs' by a teacher in one of our conservatories of music. The composer writes that the more he studies the subject, the more convinced he has become "that there are great possibilities for interesting children in birds through bird-song when presented in some such form" as the songs to which reference has just been made. "In fact," he adds, "I find that some of the songs which I have written do actually serve as aids in identifying the birds."

Although it is impossible to convey bird-music with absolute correctness

by means of our own musical notation, still much has been done to give us an idea of the pitch, time, rhythm, and melody of bird-songs by means of printed symbols. As an aid to those interested in this subject the following references are given:

Matthews: Field Book of Wild Birds and Their Music.
Chapman: The Warblers.
W. B. Olds: Bird-Songs, Flower-Songs, in two volumes, for use in schools, published by G. Schirmer, New York City, and also, by the Gamble Hinged Music Co., Chicago.
Mr. Henry Oldys lectures upon 'Birds and Bird-Music.' Of particular interest to students, is his lecture on the rhythms and melodies of bird-song.

[Imitations or so-called reproductions of bird-songs by whistling or vocal means are interesting but of less value.—A. H. W.]

FOR AND FROM ADULT AND YOUNG OBSERVERS

BIRDS AND BIRD-STUDY IN THE NORTHWEST

September 25, 1915

We had an early frost here and considerable snow two weeks ago. A great many of our migratory birds have departed for their winter homes, which generally stay with us until much later in the season. We are located in a very peculiar place and I am almost certain that many of our birds migrate across the mountains and spend the winter in certain parts of British Columbia and California.

We have the western forms of the Bluebird, Nighthawk, Tree Sparrow, Savannah Sparrow, Red-tailed Hawk, and also, several other species, among them the Hudsonian Chickadee. I have recorded the Ouzel here along the Athabasca River in December and January. I have a record too, of the Connecticut Warbler which has never been recorded previously west of Manitoba. This is a great duck country, but if we do not soon have some better laws, and more restrictions placed on gunners, I fear that ducks will soon, with the grouse, be of the past. For my list of the birds of this locality, see *The Auk*, Vol. XXVI, No. 4, Oct., 1909. Since that date, the number has swelled to 188, with several more yet to be added. I am doing my best to awaken interest in birds here and am having the children make a 'Nature-study Corner,' paying more attention to birds than to anything else. I expect to give a lecture on bird-study soon before the teachers of northern Alberta, using as many of my lantern-slides (150 in all) as I can. I shall try to have them put bird-work into their schools.—Sidney S. Stansell, *Glengarden, Alberta.*

[This contribution is especially suggestive with reference to little-known movements of certain species, the condition of game-laws in a comparatively new and thinly set-

tled country, and the opportunity of helping to awaken interest in the study of birds and nature. In the case of the Connecticut Warbler, it may be remembered that it migrates north through the Mississippi valley to its nesting-haunts "in the cold, boggy tamarack swamps of Manitoba," returning along the Atlantic coast in the fall to its winter home in northern South America. By consulting a geography it will be seen that Alberta extends well to the west of Manitoba, in fact, it would seem as though a record of this Warbler in Alberta ought to be classed as casual. There is so much to learn, however, regarding the distribution of many species that it may be found that the Connecticut Warbler has a more extensive range then is at present known.

In thinking over possibilities of coöperation with teachers and pupils in the far Northwest, why would it not be admirable to open a regular correspondence with some of the schools, in this way, creating interest not only there but also, here? Anyone desiring to do this might communicate with Mr. Stansell directly.—A. H. W.]

REPORT OF A BIRD CONTEST IN MISSOURI

The Chairman of the Nature Department of the Council of the Parish Teachers' Association of Springfield, Missouri, has sent in the following papers which received first-grade marks according to the decision of Mr. Otto Widmann, of St. Louis, to whom all papers sent in by contestants from the various schools concerned were submitted. The Chairman writes: "We have started a good work, I believe, and intend to follow it up this year by having a bird-house building contest for which we shall offer prizes. As the girls do not have manual training in the schools, we are to have a sewing contest for them. I am working to see if we cannot have a Martin-house erected in every schoolyard in the city, but it is too early to say how successful I may be."

The best first-grade paper was written by Arthur Hale, age 6, of the Boyd school. His subject was, 'A Bath in Winter.' The essay follows:

During the holidays I put a pan of water out-of-doors when ice was over everything. I watched from the window and saw a bird taking a bath in it. The bird was an English Sparrow.

'Meadowlark,' by Henry Goddard, age 8, second grade of Pickwick school:

One day last spring a little boy found a Meadowlark's nest near the schoolyard. All of us children went to see it. The mother bird found some tall grass and made a nest. In a few days we went back; there we found four eggs with brown spots on them. From the windows we would watch the Meadowlarks find worms and bugs in our school-garden.

Sometimes they would stand real still; then they would run so fast; then we could see them pick up something to eat. Every day we would visit the nest.

One Sunday a dreadful thing happened. Some boys found the nest, took the eggs and threw them on a stone and broke them. Then they destroyed the nest. The next morning we found the little dead birds. We children were so sorry.

'The Sparrow,' by Marjorie Brady, age 9, third grade, Boyd school:

One cold morning this winter when the snow was on the ground, we heard a sweet little bird singing under the eaves. My mother said it was a Sparrow and, although I have always heard that the Sparrow is a troublesome bird and does much mischief, I think it is very dear of him to stay with us and be so cheerful through the cold wintry days. I am sure we would miss him very much if he were to leave.

'The Chimney Swallows,' by Pauline Leathers, fourth grade, Phelps school:

Last summer five baby Swallows fell down our chimney. We opened the grate and carried the little birds out under a tree where we watched them for some time. When we opened the grate their eyes were open, but just as soon as we brought them into the light they closed their eyes and didn't open them again, because the light hurts the eyes of the little birds.

I tried to lift the little birds out of the nest, but baby Swallows are fastened into the nest some way, and I couldn't get them out.

The nest was made of sticks, hairs and glue which comes from the mother's mouth. They make a very pretty nest. A young Swallow's feathers look like pins.

I tried to feed the little Swallows, but they wouldn't eat. Only the mother can feed a baby Swallow. It was nearly dark when I found the little birds, but both birds and nest were gone. I hoped the father and mother birds had carried it away.

'The Bluebirds,' by York Johnson, age 9, fifth grade, Boyd school:

I put up a bird-house and then some Bluebirds came and built a nest. I watched them bring straw; the bird-house is close to a tree, so if an enemy comes, he could not attack them.

I saw the mother bird bring some food and then the little birds would chirp when she fed them. One day I saw a Robin fly by, and the Bluebird flew out and chased him away. The father bird is a darker blue than his mate; they built there time after time. I watched them push the old straw out and get new; most of the time I would see one of them on the telephone wire in the back alley at watch while the other one worked. I am going to put up a new house in the spring.

'Bird Study,' by Ruth Oliver, age 16, eighth grade, McGregor school:

Not far from my window there stood an old apple tree. One day early in May, I was looking out of the window when I saw two birds flying excitedly about. I soon saw that their purpose was to build a nest there, so I settled myself to watch the proceedings.

First they found the place most suitable and soon were busily engaged in gathering sticks which they fastened together very firmly with mud. They were kept busy the whole of that day and all of the next and the third day the mother bird laid the first egg in her new home. She laid one every day until there were four pretty blue eggs. How proud they seemed! Then the little mother bird settled herself and began the long wait for the little eggs to hatch. The male bird would bring her food and then fly up in the air and sing as though he were trying to tell the world of their nest with its four eggs and how proud he was of them.

After twelve days of patient waiting and sitting, the eggs, one by one, became little birds.

They were not the least bit pretty but their mother loved them just the same.

Their mother and father were now kept busy gathering food for the little birds, which from the way they ate, seemed to be starving.

Three days later they began to look a little more like birds, but they were still far from being beautiful. They seemed to be all mouth and eyes. But they were not, for according to the amount of food they ate they surely must have had some place to store it. I counted and their mother and father made fourteen trips in one day, each time bringing a worm, bug, or other morsel to eat. This was kept up for two weeks. By this time they were fully developed and were becoming so large that they were crowding each other out of the nest, for it was not big enough to hold such large fellows as these fine little birds were getting to be.

One day one of the young birds disappeared. At first I thought that it had been pushed out of the nest. But I soon saw that the others were leaving the nest too. One by one, they came to the edge of the nest and stretched their little wings as if to try them.

One day I went to watch them and found that they had all left the nest and had

flown away. Since then I never see a Robin but I think of the dear little family that lived in our old tree near my window.

[All contests of this kind which encourage original observation and individual effort are excellent, and incidentally, they bring out rather clearly the difference in pupils with reference to accuracy, ability to grasp details, and general interest in nature. The paper entitled 'The Chimney Swallows' would be more accurate if Swallows were not confused with the Chimney Swift. The latter, it should be noticed, is not a Swallow, although resembling the former somewhat in appearance and habits. Nestling Swifts are not really "fastened into the nest" but may seem to be if frightened, and although it is not true that "only the mother can feed a baby Swallow," it is certain that nestling Swifts are far more difficult to feed than nestling Robins or Tanagers, for example. The observation that the little Swift's feathers look like pins is good. For statistics as to the actual number of trips per day or per hour made by parent birds when feeding their nestlings, see Useful Birds and Their Protection by E. H. Forbush.—A. H. W.]

THE WINTER BIRD-LIFE OF MINNESOTA

Acknowledgment is due to the Minnesota Game and Fish Department for an especially valuable copy of its official bulletin, entitled 'Fins, Feathers and Fur.' In the December issue for 1915, there appeared a contribution from the Minnesota Natural History Survey, Zoölogical Section, University of Minnesota, which describes the winter bird-life of the state with reference to the most important phases of bird existence and subsistence. Such a comprehensive and authoritative résumé of winter conditions would be of much use in every state, particularly in the northern ones where winter conditions mean a complete reversal of those of summer. That the Game and Fish Department of a large and important state like Minnesota, lying as the latter does directly in the main interior migration path of our birds, has shown sufficient interest to publish this article on winter birds, is most encouraging evidence of the direct benefits of coöperation among the university, state, and people at large. We have so largely studied birds during the spring and summer months in most states, that there remains a wide field for observation from the fall to the spring migration. Attention might be called here to a fall migration record covering ten years (1906–1915) made at Ann Arbor, Michigan.

[See The Wilson Bulletin Vol. XXVIII, No. 3, which would make a good basis of comparison for winter records.—A. H. W.]

A METHOD OF MOUNTING BIRDS FOR CLASS USE

I suppose that almost everyone who has had occasion to give talks on birds has wished to illustrate his lectures with specimens, and has experienced more or less difficulty in doing so. Mounted birds are bulky, require special cases for transportation, and are expensive if one has to have many, and while skins are convenient enough, they will not stand much promiscuous handling. The idea for the method I am about to describe is not original with me; it is modeled after, I may as well say copied from, a mount for insects, known as

the Denton mount. I do not even know if it is patented. This insect mount is practically a glass box, with a strip of glass on either side, so placed that with the body of the insect between these strips the wings are spread out on them, the glass top over all, and fastened in place with the gummed-paper binder provided for the purpose. When it occurred to me that birds might also be prepared in some such manner, it was at once evident that glass was entirely out of the question because of its weight and liability to breakage, and I

MOUNTAIN TOWHEE PREPARED FOR CLASS USE—LOWER SIDE

MOUNTAIN TOWHEE PREPARED FOR CLASS USE —UPPER SIDE

Bird mounted by method described. The edges of the celluloid strips show in the cut as white lines, dividing the upper cover into three long narrow pieces.

thought of celluloid, which is what I have used. The first mounts were made with some purchased at a stationery store and which had been kept rolled up, and this was very difficult to make stay flat. Then I bought a sheet 21 by 50 inches from an automobile repair shop and used it. This was flat and handled very nicely. All the celluloid was more or less scratched but that does not seem to interfere with examining the specimens.

The tests I made were all with skins which I softened and worked over. A wire is run through the bird, coming out at the forehead or near there, and at the tail, and projecting well at either end. It greatly facilitates handling to

have a considerable excess which may be cut off when the bird is in position. I used No. 22 tinned iron wire, and that is heavy enough for birds as large as Jays, the largest bird I experimented with. I made the body of the bird with cotton, for it does not need to be hard, being held firmly in place by the mount. When the body has been put into the skin, the latter shaped and sewed, it is placed on its back on a board, the wings spread and pinned in place as flat as possible, using strips of cardboard over them if necessary. The wings ought, I think, to be spread far enough to show any markings. I was not very successful with that in my work.

For the mount a light frame of wood the proper size is prepared, two strips of celluloid are cut the outside length of the frame, and as wide as the distance between the bird's body and the outer edge of the wing, *plus the thickness of the side of the frame*. These are laid on each side of the frame, and held in place by tacking over them thin strips of wood (I used 1/8 inch thick), and similar strips are also tacked across the ends. A hole is bored in the center of each end of the frame, large enough for the wire to pass through and 1/4 inch or so above the edge to which the strips are fastened. Then the bird is laid in the frame, wings resting on the strips, back up, the wires run through the holes, turned and passed back through another hole bored a little to one side, and pulled tight, the bird being properly adjusted between the ends of the frame. A piece of celluloid of the proper size is laid over the bird's back and fastened in place by tacking more light strips around. Then the frame is turned over and another piece of celluloid fastened on that side by more strips. Of course during all this manipulation the plumage should be kept as smooth as possible. The photographs will probably show how it is done better than what I have written.

I have not prepared many mounts in this manner as yet, merely enough to try out the plan and get some ideas as to the method of working it. One thing which is apparent is that certain standard sizes of frames should be decided upon, and, if possible, they should be multiples of one another, so as to pack with the least possible waste of space. How far this is practicable I do not know.

In making the frames I used material I had about. It was in strips either 7/8 or 1 3/8 inches wide, and supposed to be 1/4 inch thick, but varied somewhat. The strips used for fastening down the celluloid were all 1/8 inch thick, and that seemed to give enough space for even the Jay's wings between the celluloid strip and the back.

Of the birds experimented with, a Warbler, Chickadees, Pine Siskin, and Pygmy Nuthatch were all in the 7/8-inch-wide stuff, but it could well have been narrower for these birds, 5/8 inch. The frames for the three first-named birds were 5 1/2 inches long inside. The Nuthatch was in a frame 3 3/4 by 2 3/8 inches inside. Juncos and a White-crowned Sparrow were in the 7/8, and with these 3/4 or 5/8-inch would be deep enough. Their frames were 6 1/2 inches long

inside. The Towhee which is shown in the pictures is in the 7/8-inch stuff, which is just about right for that bird. The frame is 8 by 3 7/8 inside, but the wings should have been spread more. The Jays are in 1 3/8-inch stuff, about right, though perhaps a trifle narrower might be used. This frame is 10 by 11½ inches inside. I painted the inside of the frames white, which should help in lighting the specimens.

We have here a specimen which can be handled, turned over and held to the light in any way and carefully examined, and yet cannot be touched by the student. The wire and strips of celluloid seem to hold it firmly in place, though of course actual use will very likely show where it may be improved.

I have shown a picture of Woodhouse's and Piñon Jays in one frame, two somewhat similar-appearing birds which we have here in Colorado. These can be examined and their differences noted easily. Where the sexes of a species are dissimilar the two can be mounted together. We have in winter in Colorado six fairly common species of Juncos. It would not be impracticable to put them all in one mount for comparison.

The best method of labeling is a question. I have used some white gummed labels, but have my doubts as to their adhering permanently to the celluloid. I also, on the dorsal side of the Towhee mount, printed the name on the celluloid, using Higgin's black waterproof drawing-ink. This will be satisfactory if it does not wear off with handling. The mounts should be labeled on both sides. I suppose there should be some method of cementing the joints of these mounts so as to render them insect-proof.

I have not considered the matter of painting or protecting the outside of the frame, but think a moderately dark stain of some sort would be best as not showing the effects of handling. It might be wise to use something which would give a hard smooth surface which could be easily wiped and cleaned where the mounts were subjected to much promiscuous handling.

Birds mounted thus are no doubt somewhat bulky, but they are very light and in most cases not a great many would be needed for one talk or lecture.

I may add that here seems a good opportunity to work over and make use of skins now lying idle in collections and of no particular good to their owners. Let the owners of these try their hands at this scheme and turn the results over to the schools or Audubon Societies. I would suggest to anyone who wishes to experiment, and who intends to prepare a considerable number of birds, that he get all the birds ready for the mounts, and from them figure out the sizes of the frames, keeping them as few as practicable. The lengths of frames for a group of birds may be the same even though their widths differ—thus, I put two Juncos in one frame, also another Junco and a White-crowned Sparrow each in single frames. These three frames were all the same length, 6½ inches inside.—Edward R. Warren, *Colorado Springs.*

[There is much discussion nowadays as to the advisability of using bird-skins or mounted birds in the school-room, when live birds may be seen with a little extra effort

on the part of teachers and pupils. It may be said that a museum study of birds is a great help, if properly conducted, in learning to identify a considerable number of birds. It may be granted also, that the method suggested by Mr. Warren is suitable for certain large city schools where there is little or no opportunity for field work, but in the main, *keep to the observation of live birds.*

Remember that in learning birds by means of pictures, skins, or mounted specimens the main idea aimed at is identification by size, color and markings. In the field one learns birds by their flight, song, and habits in addition to size and plumage. Without opening an argument as to the relative value of these two methods, think carefully and learn to use different methods as needed, without depending too much upon any artificial aids. Nature is the best teacher for those who will open their eyes and ears.—A. H. W.]

EXCERPTS FROM THE NATURE-STUDY IDEA BY L. H. BAILEY

"*Would you tell the child the names of things?*

"Certainly, the same as I would tell the name of a new boy or girl. But I should not stop with the name. Nature-study does not ask finally 'What is the thing?' but 'How does the thing live?' or 'What does it do?' or 'How did it get here?' or 'What can I do with it?' The name is only a part of the language that enables us to talk about the thing. Tell the name at the outset and have the matter done with. Then go on to vital questions."

. . . . . .

"Nature is not consecutive except in her periods. She puts things together in a mosaic. She has a brook and plants and toads and bugs and the weather all together. Because we have put the plants in one book, the brooks in another, and the bugs in another, we have come to think that this divorce is the logical and necessary order. I wonder!"

. . . . . .

"We are on the borderland of a mighty country: we are waiting for a leader to take us to its center."

BLACK-NECKED STILT

By T. GILBERT PEARSON

The National Association of Audubon Societies

EDUCATIONAL LEAFLET NO. 89

One of the characteristic birds of the shallow sloughs and grassy marshes of the western part of the United States is the Black-necked Stilt. Its distribution is not general throughout its range, for the very good reason that suitable feeding-places are few and scattered. As this bird gathers its food by running about in shallow water, one would hardly expect to find it on lakes where the water is deep to the shore-line, or on those marsh-bordered lakes where the tules grow high as a man's head. It haunts chiefly little ponds where the water is so shallow that it can wade all over them.

Alexander Wilson, the ornithologist, writes: "There is a striking affinity between this bird and the common Avocet, not only in the peculiar form of the bill, nostrils, tongue, legs, feet, wings, and tail, but extending to the voice, manners, food, place of breeding, form of nest, and even the very color of the eggs of both, all of which are strikingly alike." There is, however, a very decided difference in the color of the two birds. When the Black-necked Stilt is standing it appears to be wholly white below, and entirely black above, the line of demarcation being very distinctly drawn down each side of the neck and along the boundary formed by the lower edge of the wing in repose. This Stilt is one of the largest representatives of the Order *Limicolæ*, or Shore-birds, measuring about fifteen inches from bill-tip to tail-tip. It also possesses remarkably long and very slender legs. The delicately pointed bill is not so long as that of the Avocet, and shows but slight tendency to curve upward towards the end.

In the breeding-season Stilts usually associate in little communities of four to six pairs. Writing of the nesting-habits of some of these birds, which Wilson studied on the coast of New Jersey in the early part of the last century, he says:

"About the first week in May they begin to construct their nests, which are at first slightly formed of a small quantity of old grass, scarcely sufficient to keep the eggs from the wet marsh. As they lay and sit, however, either dreading the rise of the tides, or for some other purpose, the nest is increased in height with dry twigs of a shrub very common in the marshes, roots of the salt grass, seaweed, and various other substances, the whole weighing between two and three pounds. This habit of adding new material to the nest after the female begins sitting is common to almost all other birds that breed in the marshes. The eggs are four in number of a dark, yellowish clay color thickly marked with large blotches of black. These nests are often placed within fifteen or twenty yards of each other; but the greatest harmony seems to prevail among the proprietors."

These birds today may be regarded as virtually extinct in New Jersey. All those representatives of the race that come to this region to breed ap-

BLACK-NECKED STILT

Order—LIMICOLÆ
Genus—HIMANTOPUS
Family—RECURVIROSTRIDÆ
Species—MEXICANUS

National Association of Audubon Societies

parently have been either killed or driven elsewhere. Mr. Witmer Stone in his book, 'The Birds of New Jersey,' gives but a single record of the Stilt having been seen in that state during the past fifty years; this one was shot by a gunner at Stone Harbor, April 27, 1894. The Stilt seems equally rare at other points along the Atlantic coast. In Eaton's 'Birds of New York,' the author relates that "the latest New York specimens were taken fifty or sixty years ago on Long Island, some of which are now in the State Museum, the American Museum, and the collection of the Long Island Historical Society." I know of only one record for North Carolina during the past twenty years. A specimen was shot at Nag's Head in Dare County, North Carolina, in June, 1900, and is today preserved in the Museum of Trinity College at Durham, North Carolina. Mr. Arthur T. Wayne, who has been studying the bird-life on the coast of South Carolina for nearly forty years, records in his book on the birds of the state that the only Black-necked Stilts he ever saw in that territory were on Sullivan Island about the middle of May, 1881. He expresses a belief that the four birds he saw had nests in the neighborhood of a small fresh-water pond they were inhabiting.

In southern Florida Stilts may still be met with for they breed not uncommonly in many districts, from Cape Canaveral southward through the peninsula and the keys. On a key near Cape Sable Bent and Job found nests with fresh eggs on May 8, 1903. In his 'Birds of Eastern North America' C. J. Maynard wrote of the Florida Stilts he studied:

"As may readily be inferred from a glance at the birds, the Black-necked Stilts run very rapidly, but in the midst of their career they will pause suddenly, bend their long legs, and pick up something from the ground, then off again after more food. Their favorite method of feeding, however, is to wade in the shallow pools, often becoming submerged to the body, and I have frequently seen them wading in this manner among flocks of Ducks, consisting of several species. When alarmed while in the water they will raise their long wings and rise as lightly as if on the land, and squat quietly down in groups, but each individual faces the wind, especially if it be blowing hard. They are not shy birds, as a rule, allowing one to approach within a few yards, and if the intruder go too near they will give a bow or two as if balancing themselves, then rise with a harsh scream which becomes continuous when they are badly frightened."

They are common birds in many of the Bahama Islands. Mr. J. H. Riley, writing in *The Auk* for October, 1905: observes: "Almost every small pond or island mud-flat seemed to have a few pairs wading around with stately tread until the intruder was sighted, when their infernal racket began."

In May, 1916, I found the Stilts on the Louisiana marshes between Avery Island and the Gulf of Mexico. Anticipating a visit to this territory I had expressed a hope to my friend and prospective host, Mr. E. A. McIlhenny, that he would pilot me to the nesting-grounds of these curious and ridiculously long-legged birds. Upon arriving there I was assured that this wish would be granted, as he had instructed one of the guards on the Ward-McIlhenny Wild Life Reservation to begin three days before to search for a

nest with eggs. Two days later the yacht bearing us passed up a deep canal through the marsh to a region where the grass was short, and shallow fresh-water ponds were numerous. Here Stilts were in evidence, and at times six or eight birds were in sight at once.

From the canal-bank the slender yellow face of the bird-warden beamed a welcome. He announced that he had found one nest, and that doubtless others were in the neighborhood. I have seldom experienced a harder task than the half-mile walk I took with the guard to see this nest. The whole region had until recently been submerged and nearly every step was a plunge into mud knee-deep. When the long-expected spot was reached, the guide stooped down and parting a bunch of tall marsh grass, proudly pointed to an object beneath

A SCENE ON THE LOUISIANA MARSHES

him. Slowly and sadly I picked it up. It was an egg of the Louisiana Clapper Rail—and rotten. This newly employed guard had not yet become familiar with the Stilt's manner of nest-building. No doubt the Stilts had nests in the immediate neighborhood, for they were continually flying about and calling. They had a way of alighting on the mud, where, with bent legs and drooping wings, their whole bodies would quiver as though the ague of the marshes had entered their systems. Standing there and looking over the expanse of shallow ponds and treacherous mud-flats, with the heat beating down with unbelievable force and with mosquitos and green-headed flies struggling among themselves for every available spot where they might sting the soft-skinned intruder, my enthusiasm waned, so we called it a day's work and returned to the yacht.

Stilts are found in summer at various points up the Mississippi Valley.

Barrows regards them as rare in Michigan and Kumlien reports them as rare stragglers in Wisconsin, but many observers record them as common in Minnesota. About the alkaline lakes and ponds of the Great Basin, farther west, they are continually seen, often in company with the Avocet. In some of the irrigated valleys of California these birds are very plentiful.

The food of the Stilt consists of small water-snails, insects, and worms. To properly prepare for digestion the harder articles of its food the bird is provided with a toughly lined stomach, or gizzard. McAtee has made the interesting discovery that the Stilt, as is the case with some other birds, at times sloughs this leathery coating.

Although this wader is now very rare in the eastern United States, it still persists in goodly numbers in the West and South, and under the protection that seems assured to it by the new Federal migratory-bird law, the species should long survive to give grace and beauty to many of the waste places of the continent.

Most of the individuals of this species leave the United States in autumn, comparatively few remaining along the coast of the Gulf of Mexico until the returning flight in spring again sweeps them northward to their breeding-grounds.

CLASSIFICATION AND DISTRIBUTION

The Black-necked Stilt belongs to the Order *Limicolæ* and the Family *Recurvirostridæ*. Its scientific name is *Himantopus mexicanus*. It ranged originally over all North and Central America, and the northern part of South America. It breeds from Oregon, Colorado and the Gulf coast southward throughout the West Indies and Mexico to Brazil and Peru; and winters from the southwestern border of the United States southward.

The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, Secretary

Address all correspondence, and send all remittances for dues and contributions, to the National Association of Audubon Societies, 1974 Broadway, New York City.

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$5 annually pays for a Sustaining Membership
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FORM OF BEQUEST:—I do hereby give and bequeath to the National Association of Audubon Societies for the Protection of Wild Birds and Animals (Incorporated), of the City of New York.

TWELFTH ANNUAL MEETING

The twelfth annual meeting of the National Association of Audubon Societies was held in New York City on October 30 and 31. On the first evening, a large audience gathered in the American Museum of Natural History to witness a presentation for the first time of two reels of moving-picture films illustrating interesting phases of wild bird-life. These pictures were taken for the Association by H. K. Job, of the Association's field-staff. The address of the evening was by C. W. Beebe, on his studies among Pheasants in the wilds of eastern and central Asia. This was illustrated with one hundred colored slides, showing views of the country visited and pictures of the birds studied.

About thirty guests assembled that evening at the Endicott Hotel for a dinner given in honor of President William Dutcher, who, although not strong, had come from his home in Plainfield, New Jersey, for the occasion.

The annual business session was held on the morning of October 31. This was well attended, and enthusiasm and a sense of well-justified encouragement were apparent on every hand.

The report of the year's activities was presented by the Secretary, who is the Executive Officer of the National Association. The report of Dr. Dwight, the Treasurer, showed a substantial increase in financial support over that of the previous year. Reports of field-work were made by several agents of the Association, including E. H. Forbush, for New England; Winthrop Packard, for Massachusetts; Mrs. Mary S. Sage, for New York State; Dr. Eugene Swope, for Ohio; and Herbert K. Job, for the Association's work in applied ornithology. E. H. Baynes spoke of his work in lecturing and organizing bird clubs during the past year. Mrs. Mabel Osgood Wright, President of the Connecticut Audubon Society, and the Rev. Manley B. Townsend, of New Hampshire, reported on Audubon work in their respective states.

After luncheon, served in the Mitla Room of the Museum, the members returned to an Educational Conference, at which E. H. Forbush served as moderator. Discussions on various phases of the Audubon educational efforts were discussed during the entire afternoon.

Among the out-of-town members not mentioned above who attended the meetings were: Mrs. Edith Munger, President

of the Michigan Audubon Society; A. C. Webb, President of the Tennessee Ornithological Society; Dr. H. H. Covell, of Rochester; John Lewis Childs, of Long Island; Mrs. Winthrop Packard and William P. Wharton, of Massachusetts; Mr. and Miss Vibert, and Wilbur Smith, of Connecticut; Prof. H. L. Madison, President of the Rhode Island Audubon Society; Miss Gladys Gordon-Smith, of New Jersey; B. S. Bowdish, Secretary of the New Jersey Audubon Society; Miss Frances A. Hurd, School Secretary of the Connecticut Society; Dr. T. S. Palmer, of Washington; Mrs. Alice Hall Walter, of Rhode Island; Howard H. Cleaves and Harold K. Decker, of Staten Island.

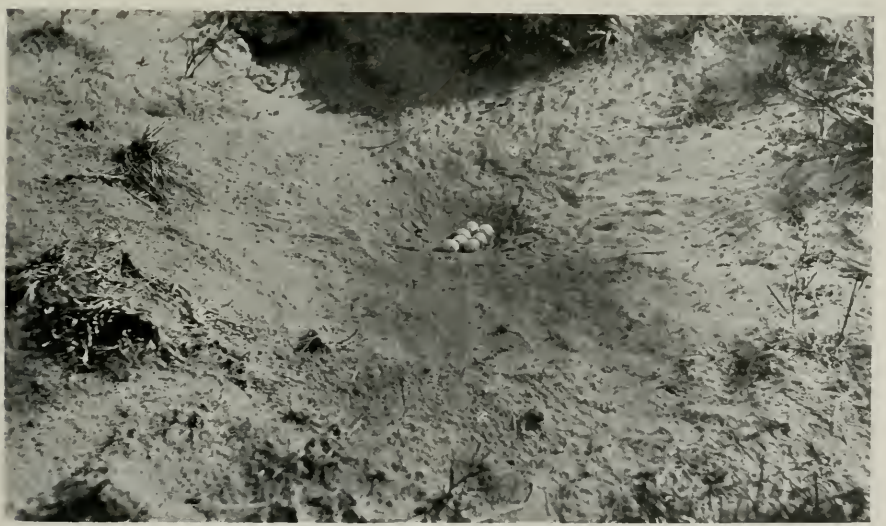
A GROUND-NESTING FLICKER

In June, 1916, I received a letter from one of the members of this Association, Mr. Harry L. Ferguson, who is in business in New York City, and who has a summer home on Fisher's Island, off the eastern end of Long Island. In this the writer stated that he had found a Flicker nesting on the ground, and the letter was accompanied by some photographs of the nest and eggs. I at once wrote for further data and asked him to keep a close watch on developments. The following communication from Mr. Ferguson was written under date of August 9, 1916:

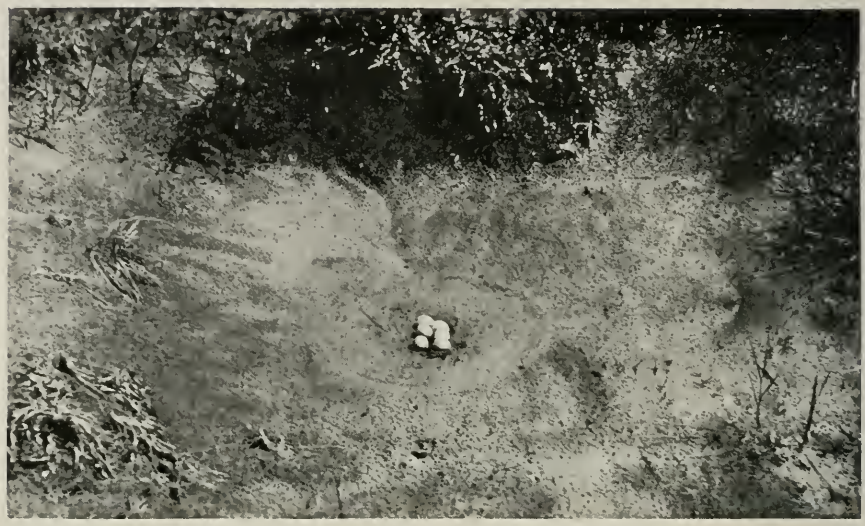
"I promised that I would take more pictures of the Flicker's nest and surrounding country, so that you could see the lay of the land, and am sending you a full set.

"The nest was situated in such an open spot that I could not get a picture of the old bird on the eggs. I tried once making a blind of bay-branches, but the bird was so frightened that I moved away, as I was afraid she would desert. The nearest trees are about 150 feet away, but they would not have been very suitable, and I have not found any except green ones there. On the opposite side of the nest and still farther away are some small fence-posts. The only bushes near the nest are short bay-bushes and these afforded no cover or shade for the nest.

"The nest was found by the family of



GROUND-BUILT NEST OF A FLICKER, ON FISHER'S ISLAND, NEW YORK
Photographed by H. L Ferguson



THE SAME FLICKER'S NEST AFTER A RAIN
Photographed by H. L. Ferguson. Note the ring made in the sand by its tail as the sitting bird turned around on the nest.

one of the game-keepers on June 9, 1916, and had seven eggs in it at that time. I visited the nest five or six times with different people, and always found the bird sitting. The last time I saw her and the eggs was on July 2; there were then only six eggs, though the fragments of the other were close beside. In one of the pictures you can see the six eggs, taken a few hours after a heavy rain. The sand was beaten smooth except where the bird turned around while on the eggs.

"I was unable to visit the nest after July 2 until July 16, and I then found that the eggs had disappeared. I hope that these pictures will give you a good idea of the situation of the nest. I took a series which are in order from beside the nest. If I can give you any fuller information about this freak bird at any time, I shall be very glad to do so."

NOTES

A British Columbian Reserve

It is gratifying to know that the National Association of Audubon Societies is receiving further outsi 'e assistance in bearing the burden of protecting bird-colonies from vandalism.

A late example of independent help in that direction is the guarding of Bare Island, a rocky, almost treeless islet in Haro Strait, separating Vancouver Island from the mainland of British Columbia. As this islet is almost on the international boundary, its seclusion as a permanent sanctuary is of as much service to us as to the Canadians, and therefore merits our grateful notice. Its guardianship is committed by law to the Provincial Museum at Victoria. This institution is one of the most active agencies in Canada for the protection, as well as the study, of wild life, and its annual reports and other publications are always valuable. Bare Island is guarded by wardens during the breeding season of the Glaucous-winged Gulls, Pigeon Guillemots, Cormorants, and (a few) Puffins, that constitute the nesting-population. Canada Geese and other Geese throng there during autumn and winter, and have been harried by white and Indian hunters; they will profit by a sanctuary. The Black Oyster-catcher and an Auklet no longer breed there.

Broadening Bird-Study

Our organizers of classes, teachers, and all others interested in the Junior Audubon field, have realized that in too many cases the instruction given and received lacked depth—seemed to content itself with acquiring the ability to recognize certain birds of the neighborhood. That is good and desirable as far as it goes, but it is too limited. A person who spoke of 'studying' automobiles, and stopped at learning the names of a few of the 'makes,' without getting a fair idea of the construction of a motor-car, the nature of its engine, its fuel, capabilities and uses, would justly be thought to know little of the subject. Similarly, in bird-study, the pupil should learn somewhat of the structure of birds as a class, the part they play in nature, the means by which they "live and move and have their being," and how the diverse forms of wings and beaks and feet exhibited by the various kinds of birds about us are adapted to the habits and activities of each sort.

The difficulty in the way of accomplishing this lies too often in lack of the requisite knowledge by the teacher, who, as a rule, is little to be blamed for this deficiency. To supply this lack, and to furnish just such information as has been indicated above, in a simple, untechnical way, Mr. Ernest Ingersoll has prepared his illustrated 'Primer of Bird-Study,' which is now offered by the National Association at a price (fifteen cents) within the reach of any purse. It has met with the approval of experts both in ornithology and in pedagogy, and may be confidently recommended to teachers of nature-study, scoutmasters, etc., and particularly to the leaders of Junior Audubon Classes. The logical arrangement of its matter, and its division by subheads, make it practicable as a text-book; so that it would well serve the purpose of elementary class-room instruction, or as a program for work in clubs, reading-circles, and families desiring to pursue a definite course of study, using the Educational Leaflets as supplementary, illustrative reading. With these possible purposes in view, special terms are offered to those who wish to buy it in quantities.

Enthusiasm in Ohio

The Audubon Society, in Columbus, Ohio, the secretary of which is Miss Lucy B. Stone, held a display of its work last October that was peculiarly successful. It attracted so much attention that the exhibit remained on view a whole week; and the society profited largely by an increase of members, while the whole town received new ideas of what the Audubon movement means. This exhibit, which included all the means and methods of bird-study and bird-protection, baths, drinking-fountains, arrangements for winter feeding, nesting-boxes, etc., was held in the Public Library. The Library has several cases of mounted bird-skins, and around these cases were grouped the tables of exhibits, carefully labeled. An illustrative feature, lending beauty as well as instruction, was a grouping of framed plates from the Educational Leaflets of the National Association. Thus, by the Library's case of birds of prey was placed the framed group of 'Beneficial Hawks;' by the case of song-birds was hung the frame of colored plates labeled 'Valuable Insect-eating Birds,' and so on. A novel and commendable exhibit was a labeled display of berries, seeds, etc., eaten by birds, illustrating the kinds of trees, shrubs and vines that should be planted to attract birds. The systematic distribution of publications of the National Association, and other useful literature, was another admirable feature of this successful show, attended by 3,000 visitors.

How Madison Helps

Mr. H. L. Madison, Secretary of the Rhode Island Audubon Society, is entitled to hearty recognition of the work he is doing at the Park Museum in Providence. Not content with mere museum administration, he has established a course of weekly scientific lectures, popu-

lar in character, and illustrated, which for several years past have attracted large and attentive audiences. Many of these are given by men eminent in the department of knowledge of which they speak, or as explorers or travelers; but, if such a speaker is lacking, Mr. Madison himself takes the platform. The program offered for the present year is varied and attractive, and in addition to it Miss Magoon will give weekly talks to children. The subjects are widely diversified, but it all helps, for the more a person learns of, and gets to enjoy, nature, the more certainly will he be a good conservationist. Mr. Madison's office is headquarters for the Junior Audubon work in Rhode Island, and in this line of effort he has been accomplishing large results.

Stuart Acres as a Bird Community

Some of the most important work in the field of bird-cultivation is done by men 'unknown to fame' until chance discloses the excellent results of their wisdom and energy. A notable example of this is Mr. F. A. Stuart, who has been quietly dotting his estate of 1,678 acres near Marshall, Michigan, with bird-boxes by the hundred (1,434 at last accounts), and doing it with such scientific precision and care that he has obtained most gratifying results. He began to outfit his property as a bird-sanctuary no longer ago than March, 1914; but so intelligently were the preparations made, and so responsive have been the birds, that, although 1915 was an unfavorable season, on June 13 of this year he had the happiness to find 292 bird-families with eggs of young domiciled in his tenements, not to mention the great number breeding in wild fashion in his trees, bushes, and fields. About half of these were Martin families, and of the remainder 52 were Bluebirds, 33 Sparrows, 32 Tree Swallows, and 5 Wrens, but we are told that wild Wrens were exceedingly numerous.

These figures are neither guesses nor estimates, but the result of close acquaintance with the facts, and the detailed records of inspection lie before the writer, covering the exact number of nests, eggs, or young found in each box on every one of the six old farms combined in the present estate of Stuart Acres. Add these figures together and one gets the foregoing summary.

Such inspections as this are made every twenty-one days during the spring and summer months, and a minute record is kept of whatever is found—and it is no small job to keep informed of what is going on in almost fifteen hundred bird-houses. That only about one in five was occupied this season seems a little disappointing to Mr. Stuart; but he accounts for it by the fact that probably too many are near farm-buildings. He finds that those more remote from buildings are more freely used, especially by Tree Swallows and Bluebirds. The boxes at a distance from buildings are mounted on fence-posts, or on iron gas-pipe eight or ten feet high. Many boxes are also placed at the edge of timber-lots, and a few in the interior of the woods. Robins and Phoebe-birds, by the way, are not counted, although shelves and brackets are put up for their accommodation.

Despite Mr. Stuart's deductions, the success achieved is certainly noteworthy, and should serve as a model for the many other masters of rural property who might well imitate his methods.

New Members

The names of new members, who were enrolled between September 1 and October 19, 1916, are entered in the general list printed in this number at the end of the Secretary's Annual Report.

EXHIBIT OF THE SPOKANE, WASHINGTON, BIRD CLUB

JOHN DRYDEN KUSER
President of the Somerset Hills (New Jersey) Bird Club

Annual Report of the National Association of Audubon Societies for 1916

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REPORT OF THE SECRETARY

INTRODUCTION

The movement for bird-protection as distinguished from game-protection is rapidly becoming a mighty factor in our American life. Game-protection is based in the last analysis on two principles, the one as a source of food-supply, the other as recreational shooting. Both these are entirely legitimate, but are readily perverted for selfish personal advantages whereby an individual or an organization may secure an excessive portion of the public supply of useful game-birds. Bird-protection rests on an entirely different foundation. It seeks to preserve and increase the wild bird-life for its economic value to the trees, the flowers, and the crops. It wants to fill the lawns, gardens, and forests with song and beauty, and thus add to the esthetic influences of human life. It seeks ever to build up and not to destroy, to teach a softening and not a hardening of man's feelings, to give life rather than to take life.

While recognizing the gains in human strength and pecuniary profit accruing from field-sports with dogs and gun, and while never seeking to curtail these, unless some hunted species is threatened with undue depletion in

numbers, bird-protection nevertheless concerns itself chiefly with the living bird and its welfare.

The Audubon Society, when first founded by Dr. George Bird Grinnell, in the year 1886, raised this standard, and beneath its banner hundreds of organized groups of bird-students and tens of thousands of individuals have since enlisted. When the Association was incorporated under the leadership of William Dutcher, in January, 1905, the same ideals were put even stronger to the fore. Bird-protection is today a popular subject in our country. Within a very few years past several of the State Game Commissions of the country have given attention to the problem of non-game bird-protection to an extent hitherto unknown. Many game-protective organizations now find it desirable to include the cause of the small birds in their efforts, which hereto have been confined entirely to such species as were shot for sport.

One striking evidence is the interest that commercially inclined persons are now showing. Certain real-estate promoters have of late deemed it wise to erect bird-boxes on their vacant lots where home-seekers are sought, and to advertise the fact that active measures are taken to attract birds. Certain commercial schemes have even encroached on the use of the name of this Association to further their ends.

AFFILIATED SOCIETIES AND BIRD CLUBS

The activities of the Audubon Societies and bird clubs affiliated by membership with the National Association throughout the United States are constantly growing in importance. They are of the greatest value in arousing local interest to a better appreciation of the value and joy of birds to mankind. We keep in touch with all these organizations and their work, and with increasing frequency the Association and the affiliated branches are able to coöperate to mutual advantage. Something of the wide range of activities of these various institutions will be found in the reports which many of them have submitted, and which are published with this report. It will be seen that they have held public bird-exhibitions, given various entertainments, established bird-sanctuaries, fed birds in winter, built and erected multitudes of bird-boxes, organized scores of Junior Audubon Classes, posted notices of bird and game laws, arranged lecture-courses, circulated libraries of bird-books, conducted bird-walks, worked for state and national legislation, and carried forward many other Audubon activities. The reports will be found to contain numerous valuable suggestions to those desiring to form a similar society, or who may wish to stimulate further life in one already established.

During the past year Ernest Harold Baynes, the well-known lecturer, and one of the Directors of this Association, traveled with Percy Mackaye's "Bird Masque Sanctuary," and lectured in most of the southern and middle states. In every town he visited that did not have an Audubon Society or a bird club

he organized one, and many of these will doubtless develop into active, useful clubs.

Last year at this time I reported that about forty bird clubs and societies had formally joined the Association. The number has increased during the year to 114.

STATE AUDUBON SOCIETIES AFFILIATED WITH THE NATIONAL ASSOCIATION

ARIZONA AUDUBON SOCIETY:
President, Thomas K. Marshall, Tucson.
Secretary, Mrs. Harriet B. Thornber, Tucson.

CALIFORNIA AUDUBON SOCIETY:
President, Dr. David Starr Jordan, Stanford University, Palo Alto.
Secretary, Mrs. Harriet Williams Myers, 311 Avenue 66, Los Angeles.

COLORADO AUDUBON SOCIETY:
President, Edward R. Warren, 20 West Caramillo St., Colorado Springs.
Secretary, Miss Leona Robbins, 1903 Alamo Ave., Colorado Springs.

CONNECTICUT AUDUBON SOCIETY:
President, Mrs. Mabel Osgood Wright, Fairfield.
Secretary, Mrs. William B. Glover, Fairfield.

DISTRICT OF COLUMBIA AUDUBON SOCIETY:
President, Hon. Job Barnard, 1306 Rhode Island Ave., Washington.
Secretary, Miss Helen P. Childs, Chevy Chase, Md.

FLORIDA AUDUBON SOCIETY:
President, Dr. W. F. Blackman, Winter Park.
Secretary, Mrs. I. Vanderpool, Maitland.

GEORGIA AUDUBON SOCIETY:
President, Hon. M. L. Brittain, Atlanta, Ga.
Secretary, Prof. R. J. H. DeLoach, Experiment, Ga.

ILLINOIS AUDUBON SOCIETY:
President, O. M. Schantz, 10 South La Salle St., Chicago.
Secretary, Mrs. F. H. Pattee, 2436 Prairie Ave., Evanston.

INDIANA AUDUBON SOCIETY:
President, Prof. Stanley Coulter, Lafayette.
Secretary, Miss Elizabeth Downhour, 2307 Talbott Ave., Indianapolis.

KENTUCKY AUDUBON SOCIETY:
President, Miss Isabel Clay, 445 West Third St., Lexington.
Secretary, Victor K. Dodge, Lexington.

MARYLAND AUDUBON SOCIETY:
President, Miss Isabel Crawford Tudor, 2410 North Charles St., Baltimore.
Secretary, Miss Minna D. Starr, 2400 North Charles St., Baltimore.

MASSACHUSETTS AUDUBON SOCIETY:
President, Edward Howe Forbush, 136 State House, Boston.
Secretary, Winthrop Packard, 66 Newbury St., Boston.

MICHIGAN AUDUBON SOCIETY:
President, Mrs. Edith Munger, Hart.
Secretary, Miss Gertrude Reading, Hart.

MISSISSIPPI AUDUBON SOCIETY:
President, Wm. Hemingway, Jackson.
Secretary, H. G. McGowan, Columbus.

Missouri Audubon Society:
President, Dr. Herman von Schrenk, St. Louis.
Secretary, Miss Rowena A. Clarke, Kirkwood.
Nebraska Audubon Society:
President, Dr. Solon R. Towne, Brandeis Building, Omaha.
Secretary, Miss Joy Hoggins, 544 South 30th St., Omaha.
New Hampshire Audubon Society:
President, Gen. Elbert Wheeler, Nashua.
Secretary, Manley B. Townsend, 9 Mt. Pleasant St., Nashua.

A MUSEUM EXHIBIT MADE BY LITTLE FOLKS
This display was the work of the Chagrin Falls (Ohio) Junior Audubon Class, under the direction of Miss Emily Collicott, teacher

New Jersey Audubon Society:
President, Anthony R. Kuser, Bernardsville.
Secretary, Beecher S. Bowdish, Demarest.
North Carolina Audubon Society:
President, Dr. R. H. Lewis, Raleigh.
Secretary, R. E. Parker, 405 Tucker Building, Raleigh.
North Dakota Audubon Society:
President, Mrs. William Falger, Devil's Lake.
Secretary, Mrs. Geo. H. Hollister, Fargo.
Ohio Audubon Society:
President, Dr. Robert C. Jones, 2373 Park Ave., Cincinnati.
Secretary, Prof. Wm. G. Cramer, Woodward High School, Cincinnati.
Oregon Audubon Society:
President, Wm. L. Finley, 651 East Madison St., Portland.
Secretary, Dr. Emma J. Welty, 321 Montgomery St., Portland.

Pennsylvania Audubon Society:
President, Witmer Stone, Academy of Natural Sciences, Philadelphia.
Secretary, Miss Elizabeth Wilson Fisher, 2222 Spruce St., Philadelphia.
Rhode Island Audubon Society:
President, Dr. H. E. Walter, Brown University, Providence.
Secretary, H. L. Madison, Park Museum, Providence.
South Carolina Audubon Society:
President, Frank Hampton, Columbia.
Secretary, Miss Belle Williams, Columbia.
Tennessee (East) Audubon Society:
President, Dr. J. F. Massey, Knoxville.
Secretary, Miss M. M. Woodward, Knoxville.
Tennessee (West) Audubon Society.
President, Dr. R. B. Maury, 1566 North Parkway, Memphis.
Secretary, C. C. Hamon, Memphis.
Vermont Audubon Society:
President, A. E. Lambert, Middlebury College, Middlebury.
Secretary, Carleton D. Howe, Morrisville.
West Virginia Audubon Society:
President, Walter Donaggho, Emerson Ave., North Parkersburg.
Secretary, Miss Ida Peters, 560 5th St., Parkersburg.

CLUBS AND ORGANIZATIONS AFFILIATED WITH THE NATIONAL ASSOCIATION

Augusta (Ga.) Bird Club:
President, Miss Helen Scott, Milledge Road, Augusta, Ga.
Secretary, Dr. Charles J. Montgomery, 918 John's Road, Augusta, Ga.
Beaver (Pa.) Field Club:
President, Mrs. Wolfrid R. Boulton, First and Taylor Aves., Beaver, Pa.
Secretary, Miss Harriet Boardman, 909 2nd St., Beaver, Pa.
Bedford Audubon Society:
President, William G. Borland, Bedford Hills, New York.
Secretary, Frederick T. Blakeman, Mount Kisco, New York.
Branch County (Mich.) Bird Club:
President,
Secretary, Mrs. E. F. Gamble, Coldwater, Mich.
British Columbia (Canada) Natural-History Society:
President, A. R. Sherwood, Victoria, B. C., Canada.
Secretary, Hon. J. R. Anderson, 410 Jones Block, Victoria, B. C., Canada.
Brookline (Mass.) Bird Club:
President, Charles B. Floyd, 19 Woodbine St., Auburndale, Mass.
Secretary, Mrs. George W. Kaan, 162 Aspinwall Ave., Brookline, Mass.
Brooklyn (N. Y.) Bird Lovers' Club:
President, L. F. Bowdish, 903 E. 35th St., Brooklyn, N. Y.
Secretary, George Schoonhoven, 773 Eastern Parkway, Brooklyn, N. Y.
Budd Lake (N. J.) Nature Study Club:
President, Miss Amy R. Brown, 257 Ridge St., Newark, N. J.
Secretary, Mrs. Martin L. Cox, 320 Clifton Ave., Newark, N. J.
Buffalo (N. Y.) Audubon Society:
President, Dr. C. E. Beach, 236 Herkimer St., Buffalo, N. Y.
Secretary, Mrs. G. M. Turner, 12 Clarendon Place, Buffalo, N. Y.

Burroughs–Audubon Nature Club of Rochester:
President, William B. Hoot, 203 Monroe Ave., Rochester, N. Y.
Secretary, Miss Anita Flint, 92 Clarissa St., Rochester, N. Y.

Burroughs Nature Study Club:
President, James B. Borland, Franklin, Pa.
Secretary, Galena A. Rew, Franklin, Pa.

Chautauqua (N. Y.) Bird and Tree Club:
President,
Secretary, Mrs. Robert Miller, 17 W. 45th St., New York City.

Cleveland (Ohio) Bird Lovers' Association:
President, Mrs. E. C. T. Miller, 1010 Euclid Ave., Cleveland, Ohio.
Secretary, Mrs. William G. Pollock, 1010 Euclid Ave., Cleveland, Ohio.

Cocoanut Grove (Fla.) Audubon Society:
President, Mrs. Kirk Monroe, Cocoanut Grove, Fla.
Secretary, Mrs. Florence P. Haden, Cocoanut Grove, Fla.

Columbus (Ohio) Audubon Society:
President, Prof. C. Hambleton, Columbus, Ohio.
Secretary, Miss Lucy B. Stone, 533 Franklin Ave., Columbus, Ohio.

Cumberland (Md.) Audubon Society:
President,
Secretary, William S. Sparks, Cumberland, Md.

Danvers (Mass.) Woman's Association:
President, Mrs. Wallace P. Hood, 57 Sylvan St., Danvers, Mass.
Secretary, Mrs. Fred G. Walker, 150 Sylvan St., Danvers, Mass.

Dayton (Ohio) Burroughs Nature Study Club:
President, Mrs. H. E. Talbott, Runnymede Lane, Oakwood, Dayton, Ohio.
Secretary, Mrs. Sidney S. King, 1 Grafton Ave., Dayton, Ohio.

DeKalb (Ill.) Wild Life Preservation Society:
President,
Secretary, Mrs. E. A. Shetter, DeKalb, Ill.

Delta Duck Club:
President, John Dymond, Jr., 1005 Maison Blanche Bldg., New Orleans, La.
Secretary, C. A. Burthe, Cottam Block, New Orleans, La.

Detroit (Mich.) Audubon Society:
President, Mrs. Jefferson Butler, 126 Philadelphia Ave., West Detroit, Mich.
Secretary, Mrs. Edward F. Rush, 52 Ferry Ave., Detroit, Mich.

Detroit (Mich.) Bird Protecting Club:
President, Mrs. J. D. Harmes, 332 Hamilton Ave., Detroit, Mich.
Secretary, Miss Agnes Sherman, 572 E. Lawn Ave., Detroit, Mich.

Dorchester (Mass.) Woman's Club:
President, Mrs. Belle R. Clark, 8 Boutwell St., Dorchester, Mass.
Secretary, Mrs. Katharine E. Smith, 46 Maxwell St., Dorchester, Mass.

Doylestown (Pa.) Nature Club:
President, Mrs. I. M. James, Doylestown, Pa.
Secretary, Mrs. Thomas Haddon, Doylestown, Pa.

Elgin (Ill.) Audubon Society:
President, Carl F. Gronemann, 310 N. Liberty St., Elgin, Ill.
Secretary, Mrs. B. M. Ikert, 613 River St., Elgin, Ill.

Englewood (N. J.) Bird Club:
President, John Treadwell Nichols, Englewood, N. J.
Secretary, Miss Elizabeth A. Dana, Englewood, N. J.

DEER FLAT (IDAHO) BIRD-RESERVATION

NEST AND EGGS OF CANADA GOOSE, STUMP LAKE RESERVATION, NORTH DAKOTA
Photographed by T. Gilbert Pearson

Erie (Pa.) Audubon Society:
President, Miss Cora A. Smith, 816 Sassafras St., Erie, Pa.
Secretary, Miss Anna F. Sherwin, 245 West 10th St., Erie, Pa.
Essex Junction (Vt.) Fortnightly Club:
President, Mrs. Marion Marvin, Essex Junction, Vt.
Secretary, Miss J. B. McBride, Essex Junction, Vt.
Evansville (Ind.) Audubon Society:
President,
Treasurer, Miss Nellie Wright, 1602 Upper Second St., Evansville, Ind.
Fitchburg (Mass.) Outdoor Club:
President, Miss Margaret W. Fosdick, 128 Prichard St., Fitchburg, Mass.
Secretary, Miss Grace F. Barnes, 29 School St., Fitchburg, Mass.
Forest Hills Gardens (N. Y.) Audubon Society:
President, E. A. Quarles, Forest Hills Gardens, N. Y.
Secretary, Miss Mary E. Kneveles, Forest Hills, L. I., N. Y.
Fort Smith (Ark.) Audubon Society:
President, Dr. C. E. Laws, 803 Garrison Ave., Fort Smith, Ark.
Secretary, Rev. Edward Wilcox, Fort Smith, Ark.
Framingham (Mass.) Woman's Club:
President,
Secretary, Mrs. A. H. Wood, 26 Pleasant St., Framingham Centre, Mass.
Frankfort (Ky.) Bird Club:
President, Rev. John J. Gravatt, corner Broadway and Washington Sts., Frankfort, Ky.
Secretary, H. G. Bright, 208 Campbell St., Frankfort, Ky.
Franklin (N. Y.) Marsh Wren Club:
President, Edson C. Stewart, Franklin, N. Y.
Secretary, Miss Marcia B. Hiller, Franklin, N. Y.
Glynn County (Ga.) Audubon Society:
President, Alfred V. Wood, Brunswick, Ga.
Secretary, Miss Annie O'Conor, Brunswick, Ga.
Groton (Mass.) Bird Club:
President, Rev. Charles B. Ames, Groton, Mass.
Secretary, Mrs. William P. Wharton, Groton, Mass.
Hartford (Conn.) Bird-Study Club:
President, Dr. E. H. Munger, 16 South Main St., West Hartford, Conn.
Secretary, Mrs. Henry F. Cone, 4 Trinity St., Hartford, Conn.
Hollins (Va.) College Bird Club:
President,
Secretary, Miss Dorothy Sevier, Hollins College, Hollins, Va.
Johnstown (N. Y.) Burrough's Nature Study Club:
President, Mr. Fred L. Carroll, 112 South William St., Johnstown, N. Y.
Secretary, Mr. Ora Potter Calderwood, 21 E. Montgomery St., Johnstown N. Y.
Lake Placid (N. Y.) Club:
President, Melvil Dewey, Lake Placid, N. Y.
Secretary, Godfrey Dewey, Lake Placid, N. Y.
Long Island (N. Y.) Bird Club:
President, Col. Theodore Roosevelt, Oyster Bay, N. Y.
Secretary, Mrs. E. M. Townsend, Townsend Place, Oyster Bay, N. Y.
Los Angeles (Cal.) Audubon Society:
President, Mrs. F. T. Bicknell, 319 S. Normandie Ave., Los Angeles, Cal.
Secretary, Mrs. Geo. H. Crane, 1217 West Santa Barbara St., Los Angeles, Cal.

Manchester (Mass.) Woman's Club:
President, Mrs. E. S. Knight, School St., Manchester, Mass.
Secretary, Mrs. E. L. Rogers, 6 North St., Manchester, Mass.

Manitowoc County (Wis.) Fish and Game Protective Association:
President, E. L. Kelley, Dempsey Building, Manitowoc, Wis.
Secretary, Fred Carus, 1402 Washington St., Manitowoc, Wis.

Meriden (Conn.) Bird Club:
President, Judge Frank L. Fay, 591 Broad St., Meriden, Conn.
Secretary, Mrs. W. C. Homan, 168 Curtis St., Meriden, Conn.

Meriden (N. H.) Bird Club:
President, Dr. Ernest L. Huse, Meriden, N. H.
Secretary, Miss Elizabeth L. Bennett, Meriden, N. H.

Michigan City (Ind.) Bird Club:
President, Miss H. A. Southgate, 218½ W. 6th St., Michigan City, Ind.
Secretary, Miss Alice M. Beldon, 810 Pine St., Michigan City, Ind.

Millbrook (N. Y.) Garden Club:
President, Mrs. Oakleigh Thorne, Millbrook, N. Y.
Secretary, Miss Katherine Wodell, Millbrook, N. Y.

Minneapolis (Minn.) Audubon Bird Club:
President, Mrs. Phelps Wyman, 5017 3d Ave., South Minneapolis, Minn.
Treasurer, Miss M. Edith Holtz, 1526 Harmon Place, Minneapolis, Miss.

Minnesota Game Protective League:
President, C. M. Odell, N. W. Nat. Life Bldg., Minneapolis, Minn.
Secretary, Frank D. Blair, Room 26, Court House, Minneapolis, Minn.

Miss Hattie Audubon Society:
President, Mrs. Pierce Butler, 1303 First St., Louisville, Ky.
Secretary, Miss Annie Temple, 1435 Fourth Ave., Louisville, Ky.

Monday Club of Weymouth (Mass.)
President, Mrs. Jennie B. Worster, 70 Commercial St., Weymouth, Mass.
Secretary, Mrs. J. Herbert Walsh, 65 Webb St., Weymouth, Mass.

New Bedford (Mass.) Woman's Club:
President, Mrs. T. F. Tillinghast, 37 8th St., New Bedford, Mass.
Secretary, Miss E. B. France, 174 Mt. Pleasant St., New Bedford, Mass.

Norristown (Pa.) Audubon Club:
President, Willis R. Roberts, 800 DeKalb St., Norristown, Pa.
Secretary, Miss Lois Formance, Norristown, Pa.

Onondaga County (N. Y.) Audubon Society:
President,
Secretary, Willis G. Booth, 421 Douglas St., Syracuse, N. Y.

Pasadena (Cal.) Audubon Society:
President, Dr. Garret Newkirk, Pasadena, Cal.
Secretary, Miss Frances K. Walter, 1085 N. Raymond Ave., Pasadena, Cal.

Philergians (The):
President,
Treasurer, Miss Mabel E. Thayer, 516 Nash St., Baintree, Mass.

Pilgrim Woman's Club:
President, Miss Edith W. Townsend, 402 Columbia Road, Dorchester, Mass.
Secretary, Miss Myra J. Warren, 19 Cushing Ave., Dorchester, Mass.

Port Huron (Mich.) Bird Club:
President, S. J. Watts, Port Huron, Mich.
Secretary, Mrs. John Gaines, 2638 Stone St., Port Huron, Mich.

WARDEN FRED ENGLE POINTING TO TWO WHITE-WINGED SCOTERS' NESTS
Photographed by T. Gilbert Pearson

NEST AND TEN EGGS OF THE WHITE-WINGED SCOTER, STUMP LAKE RESERVATION, NORTH DAKOTA
Photographed by T. Gilbert Pearson

Resolute Circle of the King's Daughters:
President, Mrs. Elizabeth Rathburn, Ivoryton, Conn.
Scretary, Mrs. L. Behrens, Ivoryton, Conn.

Richmond (Ky.) Bird Club:
President, Mrs. Robert R. Burnam, 252 The Summit, Richmond, Ky.
Secretary, Miss Bessie Dudley, Water St. Richmond, Ky.

Rock Island (Ill.) County Bird Club:
President, Burtis H. Wilson, 1010 21st St., Rock Island, Ill.
Secretary, Miss Nellie E. Peetz, Rock Island, Ill.

Rumson (N. J.) Bird Club:
President, Ira Barrows, 15 Maiden Lane, New York City, N. Y.
Secretary, Mrs. Geo. A. H. Churchill, Rumson, N. J.

Sagebrush and Pine Club:
President,
Secretary, Miss Carrie Grosenbaugh, North Yakima, Wash.

Scituate (Mass.) Woman's Club:
President, Mrs. Eva L. Graves, North Scituate, Mass.
Secretary, Mrs. Mary A. Doherty, Scituate, Mass.

Seattle (Wash.) Audubon Society:
President, Mrs. Charles Crickmore, Seattle, Wash.
Secretary, Mrs. Ralph Krows, 2222 Emmons Place, Seattle, Wash.

Sewickley Valley (Pa.) Audubon Society:
President, C. B. Horton, Edgeworth, Pa.
Secretary, Mrs. M. G. Rose, 123 Meadow Lane, Edgeworth, Pa.

Somerset Hills (N. J.) Bird Club:
President, John Dryden Kuser, Bernardsville, N. J.
Secretary, Walter F. Chappell, Jr., Bernardsville, N. J.

Spokane (Wash.) Bird Club:
President, Frederick Greenwood, 1724 8th Ave., Spokane, Wash.
Secretary, Miss Gertrude Kaye, 717 Waverly Place, Spokane, Wash.

Staten Island (N. Y.) Bird Club:
President, Mrs. Charles M. Porter, 224 Davis Ave., West New Brighton, N. Y.
Secretary, Howard H. Cleaves, New Brighton, S. I., N. Y.

Sussex County (N. J.) Nature Study Club:
President, Mrs. Wm. G. Drake, 33 Halsted St., Newton, N. J.
Secretary, Miss F. Blanche Hill, Andover, Sussex Co., N. J.

Twentieth Century Club of Detroit:
President, Mrs. George Johnston, 468 Woodward Ave., Detroit, Mich.
Secretary, Mrs. Wm. J. Latimer, Twentieth Century Club Building, Detroit, Mich.

Vassar Wake Robin Club:
President, Miss Mary K. Brown, Vassar College, Poughkeepsie, N. Y.
Secretary,

Vermilion (S. D.) Audubon Society:
President, R. A. Morgan, Kidder St., Vermilion, S. D.
Secretary, Miss Anna Kennedy, Box 512, Vermilion, S. D.

Vermont Bird Club:
President,
Secretary, Prof. H. F. Perkins, 205 S. Prospect St., Burlington, Vt.

Wadleigh Students Association:
President, Miss Frieda Finkelstein, 233 West 112th St., New York City.
Secretary, Miss Mildred Bunnell, 235 West 135th St., New York City.

Washington (Ind.) Bird Lovers' Club:
President,
Secretary, Cameron Hyatt, Washington, Indiana.
Washington State Federation of Women's Clubs:
President, Mrs. Solon Shedd, Pullman, Wash.
Secretary, Mrs. Ira D. Cardiff, 302 Oak St., Pullman, Wash.
Watertown (N. Y.) Bird Club:
President, Prof. E. W. Elsworth, Watertown, N. Y.
Secretary, Miss Antoinette Rogers, 325 Jay St., Watertown, N. Y.
Western Pennsylvania Audubon Society:
President, Charles B. Horton, 5001 Jenkins Arcade Bldg., Pittsburgh, Pa.
Secretary, T. Walter Weisman, Pittsburgh, Pa.
Winston-Salem (N. C.) Audubon Society:
President, Col. W. A. Blair, Care of Peoples Bank, Winston-Salem, N. C.
Secretary, Miss Helen Keith, 32 Brookstown Ave., Winston-Salem, N. C.
Woburn (Mass.) Woman's Club:
President, Miss Gertrude B. Hutchins, 62 Mt. Pleasant St., Woburn, Mass.
Secretary, Mrs. Blanche L. Dorr, 756 Main St., Woburn, Mass.
Woman's Club (Seymour, Conn.):
President, Mrs. E. B. Hobart, 40 Maple St., Seymour, Conn.
Secretary, Mrs. L. C. McGowan, 106 West St., Seymour, Conn.
Wyncote (Pa.) Bird Club:
President, Ernest Corts, Wyncote, Pa.
Secretary, Miss Esther Heacock, Wyncote, Pa.

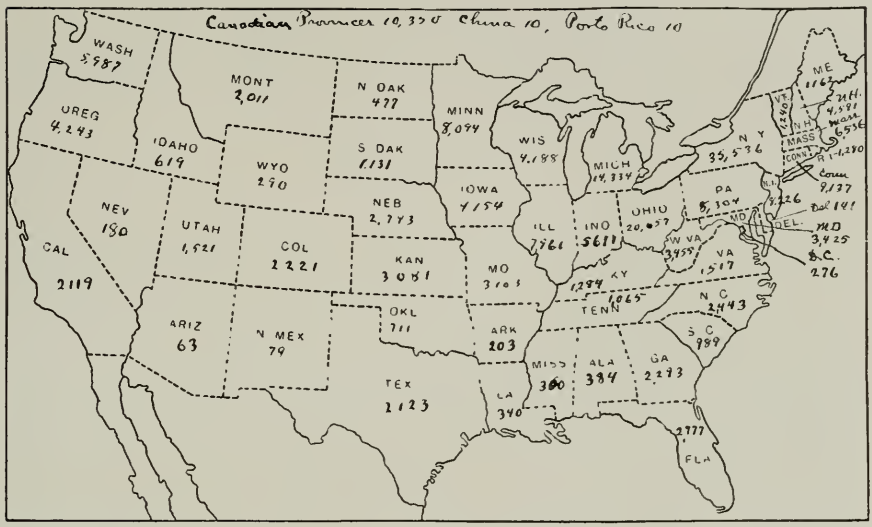
JUNIOR AUDUBON SOCIETIES

If this Association had never engaged in any effort for conservation other than its work with children, its influence for good would still have been monumental. Beginning with the school-year of 1910–1911, when we enrolled 10,595 children in bird-study classes in the southern states, this organized effort has spread with astonishing rapidity to every state in the Union and many of the Canadian provinces. Each year has seen a marked increase over the previous year, both in numbers of clubs formed and in numbers of children enrolled. The past year, 9,901 such Junior groups were formed with a total paid membership of 205,196; this is an increase of more than 53,000 over the number enrolled the year before. Owing to the unusually advantageous printing-contracts we made last year it was possible to supply this great number of children. The cost of paper has sharply risen of late, and it is doubtful if, with the funds at our disposal, this record can be duplicated another year. It may be interesting to record here that since the inception of this phase of our work six years ago, a total of 29,052 Junior Audubon Clubs has been formed, and that 584,254 children as regular Junior members have been instructed in the principles of the Audubon Society.

These children have been taught to know the common birds about them, have learned much of the economic and esthetic value of birds to mankind, some of the rudiments of the laws for their protection, the methods of making

and erecting bird-houses, the feeding of birds in winter, and somewhat of the great part birds have played in literature.

It should ever be borne gratefully in mind that this work has been possible only because of the $5,000 annual contribution of Mrs. Russell Sage and the magnificent gifts, now $20,000 annually, by a patron of the Association whose modesty is as great as his generosity, and who provides this substantial support with the understanding that the donor's name be not mentioned.



MAP SHOWING THE DISTRIBUTION OF THE 205,196 CHILDREN WHO DURING THE PAST SCHOOL-YEAR BECAME JUNIOR AUDUBON MEMBERS

SUMMER SCHOOLS

For the second season we have tried the experiment of arranging for courses in bird-study in summer schools for teachers. Most interesting and satisfactory results have attended these efforts. The work was given as follows:

Mr. Ludlow Griscom, an instructor at Cornell, provided two courses, each six weeks in length, at the University of Virginia. He also delivered several public lectures.

Prof. R. J. H. DeLoach conducted a course in bird-study at the University of Georgia, and gave a well-attended evening lecture.

Dr. G. Clyde Fisher, of the American Museum of Natural History, conducted a four-weeks' course at the University of Florida. In addition he gave four illustrated public lectures.

Miss Gladys Gordon-Smith did Chautauqua work, giving lectures in coöperation with the University of Wisconsin. Her work was confined principally to Sheboygan and vicinity, where she had adult and children's classes in bird-study the last week in July.

Miss Belle Williams instructed a class in bird-study at Winthrop College, South Carolina, for four weeks. During this time she led many bird-walks for identification of species.

Mrs. Alice Hall Walter and Professor Ehringer taught bird-study for six weeks at the Biological Laboratory at Cold Spring Harbor, New York. We supplied public lectures by the following well-known speakers: E. H. Forbush, Herbert K. Job, Henry Oldys, Robert Cushman Murphy, and Howard H. Cleaves.

It is hardly necessary to point out that interest in bird-study was thus stimulated in the minds of several thousands of school-teachers the past summer. As this work must be financed entirely by a special fund collected from year to year for the purpose, we would urge that members who are interested in the educational feature of the Association's endeavor take under advisement the matter of supporting an extension of the summer-school undertaking. Virtually the entire expense of these courses heretofore has been borne by one member, Miss Heloise Meyer.

LEGISLATION

Comparatively few states held sessions of the legislature in 1916, hence we were not called upon for the usual amount of support in this direction.

Our Massachusetts agent, with the aid of others, was able to handle the few matters that came up in the Massachusetts Legislature.

In Virginia, after many years of effort, a state game-warden force has been established by law. As usual we contributed to the campaign-fund of our friends in Virginia, and I may add that, as evidence of appreciation for our legislative efforts in that state for a number of years past, the Governor very kindly forwarded to our New York office the pen with which he signed the game-warden bill, thus making it law. Mr. M. D. Hart, the President of the Virginia Audubon Society, was very active in working for the passage of this bill, and has been made supervisor of the game-warden force.

During the year the regulations governing the killing of birds under the Federal Migratory Bird Law have been revised by the Biological Survey on a very satisfactory basis. It should be recorded here that strong effort was made by gunners and sportsmen's clubs in the Middle West to force into the regulations a provision for permitting spring shooting of wild fowl, and but for the efforts of E. H. Forbush, acting as President of the Massachusetts Audubon Society, I have no doubt that the gunners would have gained their point. He raised funds, instituted a campaign in the hostile territory, and aroused public interest among the good people there who are really opposed to spring shooting. Their protests, filed in Washington, saved the day.

During the year the treaty, which has been pending for some time between the United States and Canada in reference to the protection of migratory birds, was ratified by the United States Senate, after having been acted on favorably by Canada. At the next session of Congress there will come up the proposition of passing a bill known as an "enabling act." This is to give teeth and force to the treaty. Should this bill not become a law the treaty will remain

a dead letter because of lack of machinery for the enforcement of its provisions; hence it will be seen that there is at least one important piece of Federal legislation toward which the eyes of bird-lovers must be turned during the coming year.

FIELD AGENTS

During the past year the Association somewhat extended its field-agent force by taking on for a time some extra lecturers who did splendid work. These were:

Mrs. Etta S. Wilson, who lectured in the schools of Indiana for twelve weeks, and formed Junior Audubon Classes. Mr. Henry Oldys lectured in behalf of the Junior Audubon phase of the Association's work in Massachusetts, and also spent six weeks in visiting Teachers' Institutes in Maryland and Virginia in the interest of this work. Mr. H. R. Pattingill was engaged for five months in the schools of Michigan. Mrs. Granville Pike for three months conducted such operations in the state of Washington. Mr. Harold K. Decker during a period of eight weeks worked in the schools of Staten Island. Splendid results attended the efforts of these agents.

Of our regular Field Agents, Mrs. Mary S. Sage worked in the schools, women's clubs, and other organizations in upper New York state. She also took charge of two large exhibits that the Association established in New York City, one at the biennial conference of the General Federation of Women's Clubs, and the other at the headquarters of the National Education Association.

Mr. Winthrop Packard did excellent work of a most diversified character in Massachusetts. Dr. Eugene Swope, of Cincinnati, kept the Audubon cause before the people of Ohio in a most impressive manner. Miss Katharine H. Stuart attended to her usual duties in Virginia and spent several weeks working and lecturing in Maryland. Mr. William L. Finley did more public speaking in the past year than ever before. Mr. Arthur H. Norton looked after the Association's interests as usual in his home state, Maine.

Mr. Herbert K. Job, in charge of the Department of Applied Ornithology, has been one of the busiest men in America. He has visited numerous estates and laid them out as bird-sanctuaries, and has instituted plans for the building of duck-ponds and accommodations for the artificial rearing of upland game-birds. He has lectured frequently, and about three months of his time was devoted to making moving pictures in the field. Like all the other agents he has brought many new friends to the Association, and one of these, Mr. Charles M. Ams, has recently turned over to this Association, for experimental purposes, his large farm near Amston, Connecticut. This is to be developed as an ideal sanctuary for birds. Mr. Ams has further agreed to bear the entire expense of equipment in the way of bird-boxes, feeding-devices, duck-ponds, and breeding-pens for game-birds, where, under our Department of Applied Ornithology, experiments may be carried out.

A more complete statement of the Field Agents' work will be published with this report.

AUDUBON WARDEN WORK

The reports of our warden force for the past year indicate an average season for the birds. With two exceptions the rookeries appear not to have been molested by men bent on devastation, but, as usual, some havoc has been wrought by the elements.

In July a severe storm swept the Louisiana coast. High tides washed over many of the low-lying islets in the Breton Island Bird Reservation where Warden William Sprinkle and his son, Levi Sprinkle, are on duty patrolling the islands in our Audubon patrol-boat 'Royal Tern.' Probably two hundred thousand young birds lost their lives by that storm, as the large rookeries on the following islands were swept entirely bare at the height of the breeding-season—Sundown, Brash and Martin Islands; Martin and Mitchell Key, Sam Holmes Isle; Dead Man's Island; Battledore, Errols, Chandelier, North, Freemason's, and North Harbor Keys. The colonies on Islands Nos. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 15, as well as the colonies on Dutcher's Island, and on the Carroll Islands, seem not to have been affected extensively by the storm.

The Snowy Egrets on the coast of South Carolina and Georgia continue to show a marked increase in numbers. This statement is also true of the large Egrets on the Georgia coast.

Two of our best bird-colonies were destroyed the past season. According to Stanley Hanson, Government Bird Reservation Inspector, of Fort Myers, Florida, two men voluntarily took possession of Alligator Bay Egret rookery early in the season, and stated that if the Association would pay for their services no harm would come to the birds. This was just at the time when our funds for Egret protection were so low that it was impossible to raise the necessary funds to insure the guarding of the rookery before it was too late. It was the intention of these two men to camp on the island until the colony should become ripe, and then kill the birds for the sake of their plumes. By 'ripe,' in the parlance of the Florida plume-hunter, is meant the time of the season when the eggs have hatched, because then the old Egrets will refuse to abandon the rookery, even if they see their companions shot down all around them. Just before these two men were ready for their shooting three other plume-hunters came in and chased them away. The newcomers then proceeded to 'shoot up' the rookery, after which they cut down the bushes, piled them up and burned them, with the result that what last year was the most populous Egret rookery in Florida is now as desolate as a Belgian village. Six hundred dollars would have saved the colony.

The largest Herring Gull colony on the coast of Maine for some time has been the 30-acre island of No-Man's-Land. Last year it came into possession

LEAVING THREE-ARCH ROCK. BOHLMAN AT THE OARS, HORSFALL CATCHING THE LIFE-PRESERVER, FINLEY ON THE ROCKS.

Photographed by T. Gilbert Pearson

of new owners, and, while fearing danger would come to the colony, the Association was unable to get possession of the island although we made every reasonable effort to buy it. In the end the son of the owner was appointed warden. Later, reports came that the birds were being interfered with, and Arthur H. Norton, our agent in Maine, was asked personally to investigate the situation. He reported there was much evidence to show that the Gulls had been continually robbed of their eggs, and also that foxes had been liberated on the island. He found the colony broken up and the birds all gone. The faithless warden was called to account, and his resignation was accepted. Mr. Norton reported that many of the Gulls had resorted to a neighboring island, where we hope to insure them protection hereafter.

The Association has recently arranged for the purchase of a new patrol-boat for Klamath Lake, in southern Oregon, as our old boat, 'Grebe,' after being on duty for many years, at last, in the terminology of one of our western friends, passed over the Great Divide. This new boat was purchased from the income of the Mary Dutcher Memorial Fund.

An unusual number of violations of the bird-and-game protective laws have been reported during the past year by members in various states, and these have been given attention. More than thirty arrests have been made in New York City for the illegal selling of aigrettes as a result of a 'clean-up campaign' undertaken by the State Conservation Commission at our request. We provided two agents who secured the evidence in a number of these cases.

In the interests of the Association's work, and with the coöperation of the Biological Survey, the Secretary inspected during the year a number of the United States bird-reservations. Visits were made to Breton Island Reservation, Louisiana; Walker Lake and Big Lake Reservations in Arkansas; Stump Lake and Chase Lake, North Dakota; Cle Elum, Kachlees, Keechelus, Bumping Lakes, Ediz Hook, Dungeness Spit, and Smith Island, Washington; Three Arch Rocks, Malheur Lake, and Cold Spring Reservoir, Oregon; and Deer Flat and Minnedoka Reservations in Idaho.

While in Oregon discovery was made that a land company was quietly working to get the State Land Board to obtain from the Department of the Interior title to Malheur Lake. If the efforts to secure state control of this territory are successful, these land speculators contemplate getting title to it under a recent Oregon law, and then will drain the lake. To my mind this is the most important bird-reservation in the United States. Something of its vast bird-life is well known to bird-students through the writings and photographs of William L. Finley and Herman T. Bohlman. Their early explorations into the Malheur country supplied President William Dutcher with the necessary data to use in making application to have the lake made a Federal bird-reservation.

Upon learning of the present alarming situation the Association at once started a campaign of publicity to draw the public's attention to the threatened

destruction of Malheur Lake, and asked that protests be filed with the Oregon State Land Board and with the Department of Interior in Washington. Up to the present time the matter has not been settled.

On the Malheur Reservation are large breeding colonies of White Pelicans, California Gulls, Caspian Terns, and Western Grebes, as well as thousands of Canada Geese, and literally tens of thousands of wild Ducks representing all species found in such regions of the Northwest.

From the foregoing it will be seen that the cause of bird-protection has not yet sufficiently advanced in this country but what eternal vigilance and the reasonable use of funds are necessary if we are not to suffer irreparable loss in our wild bird-life. At any moment a valuable colony of birds is likely to be wiped out.

The warden force of forty-seven men which we maintained the past year is divided into three groups: 1. Wardens on the United States Bird Reservations, who, as a rule, receive part of their salary from the Government. 2. Wardens on the general Audubon Reservations. 3. Wardens guarding Egret rookeries.

LIST OF WARDENS ON GOVERNMENT RESERVATIONS SUPPORTED IN PART BY NATIONAL ASSOCIATION OF AUDUBON SOCIETIES

T. J. Ashe. Key West and Tortugas Reservations, Florida.
Ludwig Bethel (Assistant). Tortugas Reservations, Florida.
J. J. Furber. Klamath Lake Reservation, Oregon.
We furnish patrol-boat and pay for repairs.
Paul Kroegel. Pelican Island Reservation, Florida.
We provide a patrol-boat.
Alexander McLean. Huron Islands Reservation, Michigan.
Albert Matulich. Tern Island Reservation, Southwest Pass, Louisiana.
B. J. Pacetti. Mosquito Inlet Reservation, Florida.
We furnish engine and pay for repairs for patrol-boat.
Wm. M. Sprinkle. Breton Island Reservation, Louisiana.
We furnish and maintain large patrol-boat and small gasoline launch.
W. Levi Sprinkle (Assistant). Breton Island Reservation, Louisiana.

LIST OF GENERAL WARDENS

Maine. Austin Beal	Freeman's Rock.
Edwin E. Bailey	Pumpkin Rock.
George E. Cushman	Stratton Island.
Dennis Driscoll	Little Duck Island.
Charles D. Dyer	Matinicus Rock.
A. T. Faulkingham	Forster, Brothers, and Libby Islands.
Joseph M. Gray	Great Duck Island.
Edgar E. Harlow	Moosehead Lake.
John E. Purington	Nash Island.
Fred E. Small	Old Man's Island.
Elisha G. Bunker	Cranberry Island.
Willis E. Snow	Matinic Island.

Massachusetts. Charles V. Hanson.....Wepecket Island.
Michigan. Oliver St. Andre.....Passage Island, Gull Rock.
New Jersey. Jarvis B. Rider.....Sandy Beach.
New York. Henry O. Racket.....Gardiner's Island.
North Carolina. H. A. Bragg.....Okracoke Rookery.
Virginia. J. R. Andrews.....Cobb's Island.

"MIDDLE ROCK," OF THE THREE ARCHES FORMING A BIRD-RESERVATION OFF THE COAST OF OREGON. TENS OF THOUSANDS OF SEABIRDS NEST ON THESE SEA-WORN ROCKS IN SUMMER.

Photographed by T. Gilbert Pearson

LIST OF EGRET WARDENS

Florida. Rhett Green.....Cork-screw Rookery.
L. M. Stroup.....Cork-screw Rookery.
J. M. Jackson.....Spruce Creek Swamp, Long Island.
M. M. Malphurs.....Orange Creek, Fowler's Prairie.
M. N. Gist.....Orange Lake Rookery.
D. M. Brooker.....LaCrosse, Rainy Pond, Buckbay Pond.
S. Eliot Bouknight.....Micanopy Rookery.
R. M. Hunter.....Staggers Prairie Rookery.
J. W. Wallace.....Wallace Bay Rookery.
M. J. Boyd.....River Styx Rookery.
J. T. Shaw.....Waldo Rookery.
A. L. Jackson.....Perhaps Bay Rookery.
O. E. Baynard.....Holmes Pond and Lake Bowdin Rookeries.
G. B. Snell.....Palm Beach and vicinity.
Georgia. H. W. Manning.....Big Buffalo Swamp Rookery.
Missouri. R. L. Hall.....Red Sea Overflow.
South Carolina. Bolivar B. Furman.....Wando Rookery.
R. F. Grimball.....Buzzard's Island.
William Elliott.....Beaufort and vicinity.
Sandford Bee.....Buzzard's Island.

MISCELLANEOUS FACTS

We have published during the fiscal year, first in BIRD-LORE, and later as separates, six Educational Leaflets accompanied by colored plates of the birds treated. These were: Leaflets No. 83, Surf Scoter; No. 84, Shoveller; No. 85, Chestnut-sided Warbler; No. 86, Redstart; No. 87, Veery; and No. 88, Avocet. Our department in BIRD-LORE filled 159 pages. We have also published three new Circulars, prepared by the Secretary, namely: No. 2, 'Cemeteries as Bird Sanctuaries;' No. 3, 'Women and the Birds;' No. 4, 'Formation of Bird Clubs." During the year we have issued for the various uses of the Association the following: Four-paged 'Announcements' of information to teachers, 90,000; Circular No. 2, 15,000; No. 3, 15,000; No. 4, 1,000; Educational Leaflets (including four pages of text, a colored plate and an outline drawing), 2,915,000; and 'Field Observation Records,' 5,000. Of record-blanks, letterheads, and miscellaneous publications for office-work or for circularizing, 714,500. Correspondence, circularizing, sales, etc., required 287,587 printed envelopes of various sizes and forms, 8,200 cartons, and large quantities of wrapping-paper, twine, etc.

That the correspondence of the Association has become very heavy may be shown by the statement that at times during the past spring the home office alone frequently received no less than 600 letters in a single day. We have found that the issuing of circulars and leaflets on specific subjects, concerning which there is much inquiry, has resulted in a noticeable saving of letter-writing and postage; nevertheless multitudes of letters must be answered individually, and every effort is made to treat all inquiries seriously and courteously.

Some time ago a lady called us on the telephone and asked what was the Audubon method of catching a bird. Upon inquiry it developed that her Parrot had flown out of the window and lighted in a tree. She was gravely advised to consult the nearest policeman. Only a few days ago a letter was received which read as follows: "Will you kindly tell me what to feed an Owl? I found one in front of my home this morning. I gave him some warm milk through a dropper. It is small and of a mottled color." The writer was advised that the proper food for an Owl consisted of fresh meat.

Those who write letters in the office are constantly cautioned that communications from earnest seekers for the truth, no matter how trivial they may appear, are to be answered in the same spirit of helpfulness that one would use in replying to a letter of large moment.

To conduct the business of the Association has required the services of a permanent staff, consisting of a chief clerk, an assistant in charge of the Junior department, a cashier, a bookkeeper, and ten clerical assistants. In the busy half of the year much additional help is required temporarily. The Association also contributes to the support of our Boston branch office, in

charge of Winthrop Packard, and the Cincinnati office in charge of Dr. Eugene Swope.

The business of supplying colored lantern-slides of bird-subjects for lecturers has now become a regular part of the service of the National Association to the public. During the fiscal years 1915 and 1916 about 1,600 slides were sold at 80 cents each, and more than 900 have been used by our various local agents. About 1,000 slides remain in stock at the date of this report, covering 216 subjects. The price at which these slides are sold is little, if anything, above their cost.

FINANCES

During the year the Association has received two bequests from members who have passed away. These were $3,659.48 from the estate of Louise F. Drude; and $500 from the estate of Rose Hollingsworth.

One hundred and ten life members have been enrolled, at $100 each. The $11,000 from this source, added to the sum of the two bequests mentioned above, and further combined with a sum of $235 in the form of gifts, make up $15,394.84 added this year to the permanent Endowment Fund of this Association.

The number of sustaining members, whose fee is $5 annually, has increased from 2,558 to 3,024. The total income of the Association the past year has amounted to $113,503.77.

In conclusion the directors and officers wish to place on record their profound appreciation for the splendid support which our members and friends have given to the work the past year, but at the same time we would remind all well-wishers of the Association that our income for current expenses the past year, while the largest in the history of the Association, was far from adequate to meet the great number of calls for assistance that are continually coming from the ever-increasing army of volunteer bird-workers throughout the country.

REPORTS OF FIELD AGENTS

REPORT OF ARTHUR H. NORTON, FIELD AGENT FOR MAINE

The work of this year has been that of attending to a rather wide range of detail, such as answering questions by mail and otherwise on various subjects, relating to birds, their protection, housing, feeding, providing nesting-quarters, and so forth; distributing posters to the Association's wardens, and to owners of private estates; and gathering information useful to the Association in conducting its work in this region.

There has been no general session of the Legislature this year. As an effect of an act passed in 1915, moose have enjoyed two breeding-seasons and one shooting-season without molestation. Frequent reports this fall indicate the presence of these animals in sections where none have been seen for years, indicating an extension of their recently restricted range, and probably an increase in their numbers.

During the summer, the colony of Gulls at Ten Pound Island was visited. While the birds had raised many young, and showed no signs of disturbance, considerable mortality of young was evident. This probably was due to frequent rains during the period when they were unable to fly. Their colony was estimated to contain not less than 1,000 adult Gulls. The colony of Terns at Matinicus Rock was found to be in its usual good condition, large numbers of young being about to leave the island. At the Outer Green Island, in Casco Bay, a colony of about 500 Terns had bred, without molestation. Both here and at Matinicus Rock some mortality of the young was evident.

Attention may be called to the fact that another session of the State Legislature will convene early in January, 1917, requiring another period of vigilance.

REPORT OF WINTHROP PACKARD, FIELD AGENT FOR MASSACHUSETTS

During the past year, New England has responded heartily to the activities of your Massachusetts agent. He has been able to add 106 sustaining members and 23 life members to the rolls of the society, fees and contributions totaling $2,781.50, and the entire expense of the office being $2,289.99, which leaves a balance on the right side of the ledger of $491.51.

More than 16,000 letters have been sent during the year to carefully selected lists of New Englanders, urging them to aid the work of the society by personal effort in the cause of bird-protection, and by becoming members. Many persons have been reached through personal interviews, the office at 66 Newbury St., Boston, being the headquarters for New Englanders in search of

guidance or assistance in all matters pertaining to birds, and the work of your agent taking him all over the state. Sixty lectures have been given before audiences totaling 15,000 people.

Two Bird-Day celebrations were held in Massachusetts in which the National Association joined with the state society and the state grange, and the work was explained to large and enthusiastic audiences. In the same way the Association joined with the Massachusetts State Board of Agriculture and the state society in an exhibition at Horticultural Hall in Boston, where many thousands of visitors were interested.

As in previous years, the Association joined with the Massachusetts Audubon Society in sending out a general request that the birds be fed during the winter. Posters were placed in the post offices, all newspapers published the appeal, and all Audubon Society members, women's clubs and Daughters of of the American Revolution chapters were reached. The response was very generous, and reports show that even in the remote, thinly settled districts the birds were taken carê of. The sportsmen's associations joined heartily in this work, and there is much evidence that they appreciate the value of it and are progressing steadily toward an understanding of the aims of the Audubon societies and a realization that they can work with them for the common good.

A few bad bills were proposed in the Massachusetts Legislature, the worst, perhaps, being an ingenious attempt to give licensed hunters the right to go on any man's land, posted or not, on showing their license to hunt. This was vigorously pushed but was signally defeated. Your agent was able to enlist many sportsmen against this bill, and they materially assisted in its defeat.

REPORT OF EUGENE SWOPE, FIELD AGENT FOR OHIO

Now that state normal schools and teachers' colleges are introducing courses in bird-study as necessary to the preparation of present-day teachers, we know that the tide of public opinion has securely turned in favor of the birds. This movement in Ohio is largely a result of the activities of the National Association. The organization of Junior Clubs, with their attending educational features, has been the main factor in awakening a tardy humane sentiment toward wild birds. Perhaps one of the most telling signs of this interest in Ohio is shown in the cordial reception given your Field Agent at teachers' institutes. Teachers want to know how to conduct their Junior Clubs in a way to get their full educational value. All sorts of organizations that formerly gave no attention to birds are now inviting instructive illustrative lectures. They want to know birds, the why and the wherefore, and the progress of bird-protection. Ohio newspapers in increasing numbers are asking for Audubon news-items.

The Cincinnati Audubon Society, the Columbus Audubon Society, and

the Cleveland Bird-Lovers' Association, have kept up their usual activities through the past year, and are well recognized in the state as a center of good influence. Dr. W. A. Matheny, of the Department of Biology in the Ohio University has been influential as an advocate of Audubon educational work. Last May Dr. Matheny instructed a bird-class composed of 132 teachers, and, unlike many others doing similar work, emphatically advised these teachers to organize Junior Clubs as a part of their regular school-work.

Your agent gave 192 lectures during the year, thereby reaching many educational centers of the state, and influencing the organization of 956 classes with a total membership of 16,011 children. He has sent out over 1,000 copies of news-items to papers besides many miscellaneous articles, and has contributed a series of articles on the cat in its relation to bird-protection. Altogether, the year's work has been fruitful in results, and has laid a broader foundation for the continuation of the Audubon movement.

REPORT OF KATHARINE H. STUART, FIELD AGENT FOR VIRGINIA AND MARYLAND

The educational work in the state of Virginia during the past six years in the interest of bird-and-game protection was crowned with success on March 13, 1916, when the General Assembly gave to Virginia a State Fish and Game Commission with a paid warden system. It was my privilege to begin, in 1908, a campaign to revive a deeper interest in the protection of the wild birds and animals of Virginia. Aided by the Virginia Federation of Women's Clubs, a flourishing Audubon Society was organized in Richmond, with Mrs. Moses D. Hode as president. I visited public schools, colleges, normal and summer schools and women's clubs, all over the state, forming Junior Audubon Classes, and other bird clubs, and in seven or eight instances Audubon branches. I also gave several Audubon exhibits, many field-outings, and at the same time carried on a large correspondence. The National Association can thus point with pride to the work done by it in the interest of bird-and-game protection, Arbor Day, and many legislative bills.

I have spoken during the past year at many women's clubs, and the Virginia Federation has nine or ten clubs pledged to take up the suggestion of Mr. T. Gilbert Pearson to establish feeding-places in the cemeteries, similar to that in Alexandria, which has assisted so much in increasing the bird-popution of the old town. In June I was invited to give an illustrated lecture before the Norfolk Garden Club, composed of leading men and women of the city. There was great enthusiasm and many fine articles about the talk in the Norfolk papers; and much work will be undertaken in that city planned on the suggestions given that night. I also visited Newport News, gave an illustrated talk, and assisted in organizing the Peninsular Bird Club. In May I addressed the Bethesda Woman's Club of Maryland, with the District Federa-

tion as guest, at Franklin Park, Virginia. I proposed that the women offer prizes for a bird-box contest. It was taken up at once and the children throughout Montgomery competed for the prizes.

In October, 1915, I was directed by the Secretary of the National Association to undertake work as Field Agent in Maryland. I went at once to Baltimore and sought permission of the School Board to talk to the schools in the city, and form Junior Audubon Classes. This privilege was denied me. I then went to Annapolis, and learned from the State Superintendent that the request must be made to the State School Board. This was done by letter in December, but it was not until February that permission to proceed was given me; and even then I had to get the consent of the state superintendents and often of school principals. So much time was thus lost that only about two months were left before the schools would close. I then presented the work to schools in six counties: Montgomery, Garrett, Allegany, Baltimore, Frederick, Prince George, and Ann Arundel; and I was very much helped by Miss Starr and Mrs. Edward Bouton, who gave me names and many suggestions. I began the work in Annapolis under the Superintendent, Dr. Samuel Garner, who went with me and gave a short address in each one of his splendid schools; and he planned a delightful ten-days work in Ann Arundel County, where I visited all the public shcools and many of the private schools, and had the rare privilege of speaking to the young men of St. John's College, and to the large and flourishing Catholic Academy, St. Mary's; also to the schools of West Annapolis, Odenton, Eastport, Brooklyn, and Curtis Bay, near Baltimore. During my stay in the capital I had the pleasure of an interview with Governor Harrington, who promised his help in the work that I was doing in the state, and also his help for the game bills then pending.

My second trip was to Frederick County under Superintendent Palmer. Miss Virginia Craig, head of the primary department, was detailed to assist me, but Mr. Palmer went with us to most of the schools, giving a short and inspiring talk, and urging children and teachers to take up this work. In two weeks we visited all the grades of the schools of Frederick, Myersville, Middletown, Thurmount, Catoctin, Lewiston, Jefferson, Brunswick, Newmarket, Mount Carmel, New Midway, Woodsboro, Walkersville, Point of Rocks, Doub, Adamtown, Emmitsburg, and Franklinville, and closed in Frederick with an illustrated lecture at Hood College under Dr. Apple. The Frederick papers gave good accounts each day of my talks, and were most helpful. Montgomery County under Superintendent Burdett was next visited. The itinerary for the two weeks included the schools of Bethesda, Chevy Chase, Montrose, Germantown, Middlebrook, Gaithersburg, Washington Grove, Kensington, Forest Glen, Woodside, Takoma Park, and Rockville.

The work in Cumberland was especially delightful under Prof. John E. Edwards, and Mr. George Purdew, his assistant, was detailed to visit the schools with me. I found a great deal of bird-work being done there, but not

THE ASSOCIATION HAS FORMED 29,052 OF THESE JUNIOR AUDUBON CLASSES FOR BIRD-STUDY

many teachers had taken up the Audubon work. I also visited Frostburg and gave a talk before the large State Normal School there under Professor Webb, thus coming in touch with several hundred future teachers of the state. I also gave an illustrated lecture before the young women of the Academy. The new Audubon Society extended me an invitation to lecture before them. We had a large audience, and a most enthusiastic meeting after my talk. Mr. Edwards, Superintendent of Schools, preceded my lecture by an address, and then introduced me, and Mr. Edward Harris, son of a personal friend of Audubon, who is president of the local Audubon Society, made a delightful address. We were invited to Mr. Harris' home and had a rare treat in seeing the diary kept by his father during his walks with Audubon in Labrador and elsewhere, and many beautiful drawings of birds and animals made by these famous men. I delivered illustrated talks before schools and the general public at Oakland, under Superintendent Rathbun; and at his invitation I returned in June and gave several talks to the large summer schools in session at Oakland, and conducted three walks with the pupils. I addressed the Roland Park Bird Club on the lawn of the beautiful estate of Mr. and Mrs. Edward Bouton. Mrs. Bouton arranged for me to speak at several of the public schools, and also at the Gilman Country School for Young Men under Professor Pine. Their reception was most gratifying. I also had the pleasure of talking to the girls of the Maryland Country School for Girls near by. It would be impossible to tell of all the many kindnesses and courtesies shown me by principals, superintendents, and teachers, and of the interest of the general public, during

my stay in Maryland. For the first time since the Audubon work started in the South, Maryland stands at the head of the list in 1916, having organized 173 clubs with a membership of nearly 4,000 children.

REPORT OF HENRY OLDYS, SPECIAL AGENT FOR MARYLAND AND VIRGINIA

It has always been found by those who have been active workers in the field of bird-protection that the best way to reach the school-children is to awaken the interest of the teachers. Consequently I was much pleased to be commissioned to address summer gatherings of school-teachers in Maryland and Virginia. Although some of these gatherings adjourned too early or convened too late to come within the limits of my activities, yet I had excellent opportunity to attend a number of meetings of first-class importance, and to urge upon the educators there assembled the value and interest of forming Junior Audubon Classes.

I emphasized the fact, in all my lectures, that, apart from the opportunity they give to acquire or improve acquaintance with birds, these classes furnish an incomparable medium of union between teacher and pupil—a common ground of interest in something outside of the curriculum. To make the impression created as lasting as possible I distributed large quantities of circulars, sample leaflets, sample pages from BIRD-LORE, and sample buttons, besides much more of a miscellaneous character. These were taken with avidity by those present. I also obtained lists of the names and addresses of those attending several of the gatherings spoken to, and saw that each person was supplied later with suitable literature by mail.

The places I visited were the summer schools at Richmond, Charlottesville, Dublin, East Radford, and Harrisonburg, Virginia, and the Teachers' Institute at Cumberland, Maryland; and the number of instructors addressed amounted in all to 1,250, some of whom were listeners more than once.

It is pleasant to mention with appreciation the uniform courtesy received and the special favors shown in several instances. It was also pleasant to note wherever I went a more or less well-developed interest in birds and bird-protection.

I could feel, everywhere, that I was not bringing an entirely new vision to my audiences, but was merely emphasizing and expanding thoughts and feelings already entertained. For various reasons, so apparent and so well known as to need no exposition here, the South has lagged behind the North in the growth of this interest. But the South is no longer virgin field. The faithful and effective work that has already been done there has put the soil in excellent condition for future laborers, and the latter are assured of a lively and growing response to their appeals. There is every reason to anticipate the gathering of larger and larger harvests.

REPORT OF MRS. W. T. WILSON, FIELD AGENT FOR INDIANA

Receiving the appointment of Field Agent of the National Association of Audubon Societies on March 6, I began at once the work of organizing Junior Societies by sending out letters to the superintendents of various schools throughout the state, and also getting into touch with Superintendent J. G. Collicott of the Indianapolis public schools in order that I might properly reach the pupils of the grade schools. The replies to my letters came promptly and were very favorable. There seemed to be a wave of interest in bird-study, and as soon as it was learned that a lecturer would come at an appointed time I was besieged with applications for talks. Very shortly every possible date up to June 6, the close of the season, was taken, and had there been time many other engagements could have been filled.

I had expected at first to spend the greater part of the time in the smaller cities of the state, but the plan of introducing the work of the Audubon Society in the city schools was so enthusiastically entered into by Superintendent Collicott and Miss Rousseau McClellan, head of the nature-study work, that I could have spent every day of the three months in the sixty-six grade schools of this city. But I had already planned to visit and speak in the public schools of Warsaw, Winona, Bluffton, Michigan City, Rushville, Brazil, and Bedford, and these engagements were filled. The demand in the local schools was so great that every day not otherwise engaged was immediately spoken for. The last lecture was given on the last day of school. Between March 6 and June 6, I gave seventy-five lectures, many of them illustrated by stereopticon slides, reaching a total of 18,960 pupils and teachers. The first lecture, in School No. 2 in this city, was before an audience of 350, and a class of 398 was formed in the building, many children joining who were not privileged to hear the talk. In School No. 32 I spoke, with stereopticon slides, before a fine audience of 700 children, and the aftermath was a Junior Class of 321 pupils.

Wherever bird-talks were given there was the most intense interest in the work of the Audubon Society and all that it stands for; although, owing to purely local conditions in some of the districts, the response was not always what it should have been in the organization of Junior Classes.

In every town I visited I made it a point to reach every pupil in school that day; and even if societies have not been organized in the numbers that they might have been, interest in the life and protection of birds has been so awakened that much good must result, not only for the birds but for the boys and girls who have been taught to safeguard the life of every bird.

Wherever I have talked I have started this slogan among the children: "Save the birds," and it has had most beneficial results. I have had many letters from boys and girls telling me of specific instances where they have been able to save a bird's life. One boy wrote me, "I have saved a bird;" and he

proceeded to tell me how he had seen, while returning home from carrying newspapers in this city, a boy with a gun pointed toward a tree and about to shoot a bird. He called out "Don't shoot, wait a minute," and while saying this he picked up a stone and threw it up in the tree frightening the bird away so that the boy could not shoot it. Then the boy with the gun was very angry and shouted, "What did you do that for?" and, to quote literally from the letter, the rescuer replied; "You ought to join the Audubon Society and learn how useful the birds are."

"You go 'long about your business," was the angry retort.

"This is my business, saving birds."

In addition to my lectures I have sent out nearly 200 letters and parcels of literature, and have written nineteen articles on birds since March 6. My husband joined in giving a prize of a $15 Martin-house to the school in Rushville whose pupils identified and reported the largest number of migrating birds between March 1 and April 22. The prize was awarded to the Graham Annex, and the raising of the Martin-house on the school-grounds was a pleasant incident in the program of the annual convention of the Indiana Audubon Society, held in Rushville, April 27 to 29, and largely attended.

REPORT OF WILLIAM L. FINLEY, FIELD AGENT FOR THE PACIFIC COAST STATES

The proposal to drain Malheur Lake to make more agricultural land in southeastern Oregon has threatened during the past year to put an end to the most important breeding-place for wildfowl in the United States. This matter will soon come before the State Land Board of Oregon. Mr. Pearson recently made an inspection of Malheur Lake Reservation and found it very questionable whether the alkali-soaked soil of the lake-bed could ever be of any use for agricultural purposes; while, on the other hand, this extensive alkali marsh is of great value as a wildfowl nursery. Every effort will be made, therefore, to save Malheur Lake as a wild-bird reservation.

During the past year, the season has been a very successful one for the increase of bird-life on Three Arch Rocks Reservation, as well as on the Klamath Reservation. A tour of inspection was made in August of Three Arch Rocks Reservation by Mr. Pearson, Mr. Bohlman, Mr. Horsfall, and your agent. (See pages 421 and 424.)

More than ten years ago the National Association purchased a small patrol-boat for Lower Klamath Lake. This has been in constant use since, but is now worn out. The appropriation of $600 by the National Association for a new boat will make it possible to continue the guarding of these bird-colonies in this region of southern Oregon and northern California, and is greatly appreciated by bird-lovers on the Pacific coast.

In the Junior Audubon work, there has been a material increase in members,

especially in Washington and Oregon. A year ago there were 266 Junior Classes in California, Oregon, and Washington, with a membership of 4,380; during the past year, 629 societies have been organized, with a total of 12,349 children. Governor Withycombe, of Oregon, issued a special proclamation setting aside May 26 as Bird Day, and urging that each boy and girl in Oregon make an effort on that day to become better acquainted with the bird-life of the state. The proclamation suggested that parents and teachers include in the daily program, both at home and at school, fitting instruction regarding the value of

ONE OF THE MANY COLONIES OF NESTING BIRDS ON MALHEUR LAKE, OREGON THREATENED BY THE PROPOSED PLAN TO DRAIN THE LAKE
Photographed by Finley and Bohlman

our wild birds. The day was observed throughout the state by a large number of schools.

The plan of getting moving pictures of wild birds and animals for educational purposes has been continued. The wild-bird reservations in this part of the country have been visited for this purpose. In order to show the great value of the reservation as a need for saving our wild birds and animals, a trip was made to the Yellowstone Park with the moving-picture camera, and exceptional pictures were taken of antelopes, elks, deer, beavers, buffalos, bears, conies, marmots, squirrels, and jays. Lantern-slides and reels of moving pictures have been used in giving sixty-three lectures in Oregon, Washington, and in various Eastern States. Lectures showing the educational work and the value of reservations for the protection of wild birds and animals

CASPIAN TERN COLONY, MALHEUR LAKE, OREGON

A MOTHER REDHEAD DUCK ON MALHEUR LAKE, OREGON, LEADING A FLOCK OF NINETEEN DUCKLINGS AWAY FROM THE CAMERA

Photographed by Finley and Bohlman

A PAIR OF WHITE PELICANS AND YOUNG MALHEUR LAKE, OREGON

were given by your agent during the past year before the Minnesota Game Protective League, American Society for the Extension of University Teaching, Ogontz School, National Geographic Society, Columbia University, American Museum of Natural History, Brooklyn Institute, Vermont Game Protective League, Springfield Fish and Game Association, Fairbanks Museum of Natural Sciences, Twentieth Century Club of Cleveland, National Conference for American Game Breeding held under the auspices of the American Game Protective Association, the Massachusetts Audubon Society, and other clubs and organizations.

REPORT OF HERBERT K. JOB, DEPARTMENT OF APPLIED ORNITHOLOGY

In response to a large and growing demand for practical assistance and instruction, this Department was formally instituted on August 1, 1914. In taking this action the Association decided to foster a nation-wide movement for popularizing direct, practical measures for the increase of wild bird-life, and for propagating game-birds and wild water-fowl. Previous experience had shown that to meet the flood of questions continually asked, practical information must be provided for general distribution. Therefore bulletins on the propagation of game-birds, and of wild water-fowl, were speedily prepared and published in large editions. Moreover, in order to present the entire subject in a concise form, and to provide a textbook for the Department, a manual of applied ornithology, entitled 'Propagation of Wild Birds,' was written and placed on the market.

Personal assistance has been furnished to many individuals and organizations, and interest in attracting birds to come and remain about the place has been widely stimulated, both through personal inspections and by a large volume of correspondence. On the estate of U. S. Senator George P. McLean, Simsbury, Connecticut, nesting-boxes were put up by the Department, which have been largely occupied during two seasons. The estate of Otto H. Kahn, Coldspring Harbor, Long Island, was supervised for this purpose. During the winter a surprising number of small birds and some Quails were fed, requiring more than 150 pounds of seed-mixture, besides much suet. The nesting-boxes erected there were mostly occupied. Nesting-boxes were also set up on the grounds of the Biological Laboratory in the same town. Edmund C. Converse was assisted on his estate at Greenwich, Connecticut, in attracting birds and in breeding wild ducks. His interest and enthusiasm were so developed that he has now employed an expert to devote his whole time to making his great estate a wild-bird paradise. The Tarrytown, New York, estate of William Rockefeller has received constant attention from the Department. Near Philadelphia, on the estate of Alfred C. Harrison, a colony of Purple Martins has been established, and other occupants of nesting-boxes. Inspections have

been made for Forest Park, Long Island, for the Forest Hills Gardens, and for the City Park Commission of Wilmington, Delaware.

Assistance in propagating birds has been widely furnished. Such was given to William Rockefeller in Quail-breeding, and to Senator McLean with Quails and Ruffed Grouse, both with gratifying success. Inspection has been made for W. A. Harriman of the Harriman estates and the State Park at Arden, New York, and important measures for planting wild-duck food-plants and propagating wild ducks for liberation are under way. On the large reservoir tract of the Bridgeport (Conn.) Hydraulic Company, an expert in game-breeding is now employed, and notable success has been achieved in raising Quails on a considerable scale, without disease or appreciable loss. Many other estates and preserves have been visited and assisted, such as those of the Okeetee Club, South Carolina, the Jekyl Island Club, Georgia, the Woodmont Rod and Gun Club, Maryland, the Childs-Walcott Preserve, Norfolk, Connecticut, the Conservation Commission, Louisiana, and others.

Lecturing is constantly maintained, to interest the public in these practical methods, and also for general cultivation of interest in the conservation of wild bird-life. For illustrative material, colored lantern-slides and motion-picture films are used. All available time is given to calls for lectures, but many requests have had to be declined for lack of time.

In order to secure abundant and attractive illustrative material, so important at the present time for interesting the public, the Department has already, in addition to a very large series of plate-pictures, produced seven reels, 1,000 feet each, of motion-pictures of wild birds in action, covering the spectacular life on great breeding-reservations, large concourses of wild ducks and geese on the Louisiana refuges, game-bird and wild-fowl rearing, the attracting of birds, and the home life of our common songsters.

Investigations of various practical problems have been maintained, and new data are constantly being gathered for future publication. In coöperation with William Rockefeller and Edmund C. Converse, the Canvasback has been bred in captivity for the first time. The breeding and rearing of Quails have been reduced to a definite system, now followed by various state and other game-farms. Further experimentation on the rearing and feeding of wild ducks is now carried on by the Association in northern Manitoba, where a large bunch of young Canvasbacks has been reared to maturity this season, with almost no loss; also young Golden-eyes—a difficult bird to handle.

For a long time need has been felt by this Department of some place, under control of the National Association, where it could carry on special research in its own way, and thus have an experiment and demonstration station, where bird-lovers could be shown by actual examples how to attract and propagate wild birds. This hope is now becoming realized through a newly found friend of birds, Charles M. Ams, of Bridgeport, Connecticut. In order to own and control a beautiful lake, said to be nine miles around, he purchased

THE WILDFOWL BREEDING-POND AT AMSTON, CONNECTICUT

GEESE, DUCKS, AND SWANS ON THE WILDFOWL POND OF JOHN HAYWOOD AT GARDNER, MASSACHUSETTS

virtually the whole village of Turnerville, Connecticut, now called Amston, situated in a lovely, diversified country, a natural resort of birds. One especially attractive feature is an ideal small pond for the breeding of wild water-fowl, with an abundant natural food-supply.

An inn is soon to be opened to accommodate students and visitors, the water-fowl pond is being fenced, and an aquatic house, on a new model, is under construction for the accommodation in winter of wild ducks.

The Department of Applied Ornithology clearly meets a real need, as the demand for its services has outgrown the Association's present ability properly to meet. It is hoped, and confidently expected, that means will be provided from time to time to enlarge this important enterprise.

REPORT OF MARY S. SAGE, ORGANIZER IN SCHOOLS

My work began in Albany, New York, last fall, and continued until all the schools had been visited, and the work was then extended to the surrounding towns. Schenectady was especially active, the Superintendent of Schools making all appointments, and I visited all the city schools. A number of bird-houses were made and exhibited and the Park Commissioners gave several prizes. At the request of the principals I spoke at the Parent-Teachers' Association in several schools, and was told by the members of the Program Committee that they had the largest audiences the nights I spoke. Often a discussion followed, and many questions were asked.

In all 148 talks and lectures were given during the year, reaching 21,600 children and adults—a conservative estimate. I was asked to speak at a teachers' institute, which I did, and met many teachers who asked me to come to their schools. I spoke at Rensselaer, Troy, Waterford, Watervliet, Castleton, Ravena, Altamont, Schenectady, Kinderhook, Valatie, East Greenbush, Nassau, Averill Park, Wynantskill, West Sand Lake, Lansingburgh, Clinton Heights, Stottsville, Niverville, Rhinecliff, Poughkeepsie, Pine Plains, Staatsburgh, Hudson, Hardin's Crossing, Brookview, and at the Normal School in New Paltz. Several times I was asked to return and talk to the parents.

At Altamont there was a large Junior Class, but confined to one room where the teacher was especially interested. After my talk in that school several teachers formed classes. At Ravena I spoke in the school, going to the rooms, with the result that the principal asked me to come some evening and speak to the parents. The night I went to Ravena was a bitterly cold night, but the room was so crowded the children sat on the platform, and I scarcely had room to stand. At Waterford the same thing happened, another cold night, but the room filled, with many teachers present. At Averill Park, a suburb of Troy, I spoke in the school one afternoon, and the principal went at once to the only theater in town where moving pictures were shown, and made arrangements for me to show the slides there. That night was not only cold but stormy

as well, but the seats were all taken, a great many parents coming with the children.

At Poughkeepsie the Superintendent of Schools was not especially interested at first, but allowed me to speak in the high school, with the result that I was asked for a second lecture at one of the new schools, had a large and appreciative audience, and the superintendent was very complimentary in his introduction.

While I always try to see the District Superintendent, I am not always able to do this, so I went to Dr. Finegan, Commissioner of Elementary Education, and he gave me permission to go into all the schools, saying "I wish you could, and would, go into every school in the state." Dr. Finegan is greatly interested in this work, and has offered to help in any way he can. Dr. A. W. Abrams, Director of Visual Instruction, is also interested, and while it is not customary to loan a stereopticon, he has done so when the school has not been equipped with the necessary apparatus, and the principal has asked to have my slides shown. In the country schools, where there is no opportunity to show the slides, the leaflets are used, a great many mothers come, and I can speak directly to them, which is not always possible when the audience is large. At the National Education Association meeting held in New York, in July, I met a number of teachers from different parts of the state and have been asked to go to their schools.

I feel greatly encouraged about the work, as I am welcome wherever I go; and while classes may not be formed in every school, the work is certainly gaining, and interest and enthusiasm are increasing.

BIRDS KILLED IN FEBRUARY BY AN OKLAHOMA TRAPPER. ANOTHER EVIDENCE OF NEED FOR FUNDS TO ENFORCE THE FEDERAL MIGRATORY BIRD LAW
Photographed by F. S. Barde

REPORTS OF AFFILIATED STATE SOCIETIES, AND OF BIRD CLUBS

California Audubon Society.—This Society held its tenth annual meeting last June. Our Secretary, knowing that she could not personally reach all the organizations wishing bird-programs, wrote two lectures, illustrating one with colored pictures of birds, and the other with stereopticon slides. These lectures were extensively used throughout the state, five clubs in the north using them in March. Mrs. Myers visited San Diego and gave lectures before the Humane Educational League, the schools, and at a reception given her by the Woman's Board of Managers of the Exposition. She also gave a lecture at Escondido.

Mrs. R. C. Hogue, of San Diego, has lately prepared twelve sets of bird-pictures to be used this year in her city, suburban, and county schools. The County Librarian is also furnishing three pictures, mounted and bound in volumes, for the county schools, she having ten stations in the county. In Tuolumne County, Mrs. Adele L. Grant has been speaking before farmers' and teachers' institutes, and writing articles for the newspapers of that district. Last year Dr. George Wharton James used about sixty of our slides at the San Francisco Exposition, and this year has been using them with great success at the San Diego Exposition. In the south the same faithful workers are doing lecture-work. Several new Junior Societies have been organized.

This year, in addition to ordinary leaflets sent out, we have published one on licensing cats, and we are working for this measure. Pasadena is the first California city to have a cat-license ordinance. We have taken action on the following national issues: The treaty between Canada and the United States; protests against spring-shooting in any of the states, and against draining Malheur Lake in southeastern Oregon; and advocating game-sanctuaries. We have just issued an attractive sticker-stamp which shows a Phainopepla in flight between branches of a pepper tree.

We have sustained a great loss in the death of our Vice-President, Charles Frederick Holder. Professor Holder worked hard for the non-sale-of-game bill in this state, even though at that time he was not well. His advice and efforts have been greatly missed. An honor has come to the Society in the election of its secretary to the Chairmanship of Birds of the General Federation of Women's Clubs.—(Mrs.) Harriet Williams Myers, *Secretary.*

Colorado Audubon Society.—This Society was organized in May, 1913, was incorporated the same year, and affiliated with the National Association of Audubon Societies in 1916. During the past year much attention has been given to the Junior work. Lectures illustrated by slides, photographs, and magazine prints, mounted birds and skins, have been given to teachers and

pupils, and increased interest in birds is being shown throughout the schools of the state. We have had printed 1,000 posters on heavy drilling, and 100 on Bristol board for signs out-of-doors and indoors. The headline of these posters is 'Save the Birds,' in large clear print that easily arrests the eye.

Denver has been enjoying R. B. Rockwell's bird-lessons. In May, Mrs. J. Will Johnson, of Pueblo, gave a Bird Festival at her charming home. Colorado Springs has the distinction of Dr. Arnold's Bird Hospital, and the suburbs south of Colorado Springs have recently organized the Cheyenne Bird Club under the management of L. L. Shaw. We understand that a similar organization has been formed in Estes Park. Various conservation committees of state organizations have applied to us for suggestions and literature on bird-protection, and have stated their desire to coöperate with us in this work.

Our Audubon Society has united with others of the country in protesting against the extension of the spring-shooting season; in urging ratification of the treaty with Canada relative to the protection of migratory birds; and in protesting against the draining of Malheur Lake—all matters of vital interest to the commonwealth.—Leona Robbins, *Secretary*.

Connecticut Audubon Society.—The work of the Connecticut Audubon Society during the past year has been again along the educational line. One hundred and fifty new bird-charts were bought, and 180 were loaned out during the year to schools. The 69 traveling libraries were loaned to 71 schools, making a total circulation of 2,457 books, an average of 47 read in each school that reported; 7 volumes of leaflets were sent out with the traveling libraries, to remain as the property of the schools. Portfolios of pictures were loaned to 25 schools, and collections of postcard pictures of birds to 37 schools.

The Society's lectures were used by schools, churches, libraries, boy scouts, bird clubs, and before the Ladies' Guild and the Men's League. Lecture No. 17 'Through the Year with the Birds,' was used seventeen times with an attendance of 1,687. At the Men's League, where this lecture was given, it was received with great appreciation and enthusiasm. Lecture No. 2, 'Birds about Home,' was used seven times, and heard by 1,516 persons in six audiences. Lecture No. 3, 'Adventures of Some Robins,' was used once, attendance 225. The new lecture, 'The Orchard Playroom,' was used five times, attendance 693. Total number of lectures thirty, and total attendance at twenty-eight lectures reported was 4,121.

In the Junior Audubon work, carried on in coöperation with the National Association, Connecticut now ranks fourth among the states, as 449 classes, with a membership of 8,401, have been organized during the year. The school secretary has given 250 talks to 25,000 children, and to several organizations, and many classes have resulted. Classes were established by correspondence also in more than 100 different places, and more than 8,400 educational leaflets and 5,000 announcements were sent out. This Society introduced a new

feature into the school-work this year by giving a series of lectures in places where particular interest had been shown in bird-study, or where it seemed advisable to create such an interest. This was done by Game-Warden Wilbur F. Smith, with gratifying results and much appreciation.

As to our 'Birdcraft Sanctuary,' we have added a new room to the Museum, with three new groups in their habitats,—one a water-scene, another shore-birds, and the third a group of Connecticut mammals. There is a study-case of birds in the new room, and it is hoped that this will be the beginning of a more accurate knowledge of local bird-life. The Hartford Bird Club presented the Museum with a beautiful specimen of an American Eagle, which was put up, holding an American shield in its claws, on the day before Flag Day. There have been 4,509 visitors to the Sanctuary. Seventy-nine nests have been found in the Sanctuary, and 110 species of birds were seen, among them a Great Blue Heron, a Bittern, a Black-crowned Night Heron, and Kingfishers.

The Connecticut Audubon Society feels honored that the one who did most to get the migratory-bird law ratified between the United States and Canada was one of the citizens of Connecticut, the Hon. George P. McLean, of Simsbury.—Helen W. Glover, *Secretary.*

District of Columbia Audubon Society.—It is harder than usual to write the report for this year, for death has brought more changes in our personnel than ever before. In the winter our first president, and always interested member, Gen. C. H. Sternberg, U. S. A., was taken from us, followed soon after by Prof. B. T. Janney, for years a member of our Executive Committee, and until his death one of our honorary vice-presidents. The third death was not only a personal loss to our Society, but it can be truly said was a national loss, for Prof. Wells W. Cooke was known wherever there was an Audubon society. A lover of people and nature seems the most appropriate description of him, for he was always ready to help one in any way. He was the heart and soul of our spring outings and it seemed as if they could hardly be carried on without his moving spirit; but that seemed a poor way of showing our appreciation of his work. He had already planned the walks, and everyone connected with them did his or her best to make them a success. We had a larger attendance than ever before, more persons going on all the walks than at any previous time, and a greater variety of birds was observed than has been recorded in the past.

Under Mrs. Florence Merriam Bailey's most efficient leadership we had our bird-study classes; and Louis Agassiz Fuertes most courteously gave us his lecture on 'Bird Songs' in place of an expected lecture from Professor Cooke on 'Bird Migration.' We have also had delightful illustrated lectures from W. L. Finley, and Herbert K. Job. Three numbers of 'Current Items of Interest' have been published by Henry Oldys.—Helen P. Childs, *Secretary.*

East Tennessee Audubon Society.—Six years ago, on October 10, 1910, the East Tennessee Audubon Society was organized by a few men and women who were earnest bird-lovers. Nine adults were enrolled as members, and several children under fifteen, who by paying ten cents became members without a voice in the proceedings. We now have 100 on the roll.

In the last year we have become affiliated with the National Association; have joined in protest personally, and as a society, against shooting of wild-fowl, and have telegraphed our Senator to use his influence in behalf of the

EXHIBIT OF EAST TENNESSEE AUDUBON SOCIETY

treaty between Great Britain and the United States for the extension of the Migratory Bird Law into Canada.

Mrs. Walter Barton, treasurer and deputy game-warden, and Mrs. Karl Steinmetz, recording secretary, have been untiring in their efforts to further the cause. Mrs. Steinmetz has a class of sixty in a colored school, while Mrs. Barton has a large class of white children. Both these ladies give many talks in schools, etc. They attended the Farmer's Convention in May, armed with literature which they distributed with apt talks to the farmers that have since borne abundant fruit. Harbison's Cross Roads and many farms have been closed to all hunting. While we cannot directly claim the following honor, we hear that by legislation the counties of Monroe, McMinn, and London have enjoyed a closed season on game-birds for several years, with the result that where one Bob-white was found before you may now count a dozen.

We had an exhibit at the East Tennessee Division Fair. Through the generosity of Messrs E. C. Camp and T. J. Hinton we were enabled to offer

prizes for bird-boxes. Our president, Doctor Massey, gave two days to the fitting up of the space allotted us in the agricultural display, assisted by our ladies, who supplied and arranged decorations, flowers, etc.—MAGNOLIA WOODWARD, *Secretary*.

Florida Audubon Society.—The fifteenth annual meeting of the Florida Audubon Society was held on March 30, 1916, at St. Petersburg, under the auspices of the local branch of which Mrs. Katherine Tippetts is president. The proceedings occupied two days. The business session at 2 o'clock, was held in the hall of the Woman's Club, Dr. William F. Blackman presiding. Mrs. Tippetts and Mrs. Barton gave reports of the year's work at St. Petersburg; reports were given or read from affiliated societies, classes, or clubs by Mrs. Wilson, of Kissimmee; Mrs. Hanson, of Fort Myers; Mrs. Monroe, of Cocoanut Grove; Mrs. Coulson, of Bradentown; and Mrs. Vanderpool for State Society. All the officers were reëlected except the treasurer, Mr. Powell having resigned after a year of faithful service; Mr. W. Scott Way was chosen to this position. Miss Isabelle Goodhue, field agent, gave an account of her work during the winter, when she spoke before women's clubs, colleges, schools, and other audiences, and assisted in forming Junior Audubon Classes. In Florida, 149 Junior Classes with 2,777 pupils were organized the past year.

At the evening session, Dr. H. R. Mills, vice-chairman, and president of the Tampa branch, gave an interesting talk, illustrated with his very fine slides, on the destruction of bird-life in the South, especially referring to the Egret. Miss Goodhue gave vocal imitations of the songs and 'call-notes' of many birds. Dr. Sampson spoke of the cat license and its success in St. Petersburg. Mr. Stanley Hanson, federal inspector of Florida migratory birds, gave some interesting observations on bird-migration.

On March 31, as guests of the St. Petersburg Society, a party of ninety visited the Government bird-reservations in Tampa Bay; about forty birds were noted, among them the rare Roseate Spoonbill.

At Melbourne, Mrs. Richard W. Goode formed, in May, a Bird-Lovers' Class which has continued its study during the summer. A similar class was formed for summer study by Mrs. Clarke, of Manatee.

From Abbot Charles of St. Leo Abbey at St. Leo, letters have come showing that birds are there protected, no firearms are allowed, and attention is given to bird-study. Prizes were given at the Hungerford Normal and Industrial School, Eatonville, for bird-papers.

Miss Isabelle Goodhue is to act as field agent the coming winter, beginning her itinerary October 1.

Dr. H. R. Mills has done important work by correspondence with the candidates for the Legislature of 1917, hoping to secure their pledges in favor of better state game and bird-laws.

The importance of a sea-wall at Bird Key has been presented to the Depart-

ment of Agriculture at Washington.—(Mrs.) KINGSMILL MARRS, *Chairman of Executive Committee.*

Kentucky Audubon Society.—Our Society was formed on January 8, 1911, and now numbers 138 members. During the past year we have devoted the most of our time to bird-study, fulfilling the schedule of two walks a week during the spring-migration period, and one walk (for aquatic birds) this autumn. Our four Junior Classes have been highly successful; and, in addition to the regular Junior bird-study, small prizes were given in each public school in the city to the pupil making the best nesting-box and to the first one reporting a bird nesting in his box; and special prizes to other schools. We have put several large and small feeding- and shelter-houses in our beautiful cemetery, which is a bird-sanctuary, and have put a bird-bath on our library grounds. These have served as models for the community.—EUGENE SIMPSON, *Assistant Secretary.*

Massachusetts Audubon Society.—During the past year the Massachusetts Audubon Society, with the guidance and very substantial aid of the National Association, has added 6,536 members to the Junior Class membership, a total of 26,980 since the work began among the young people of Massachusetts. There is abundant evidence that this work among the children reaches the grown people as well, and the friends of bird-protection were never before so numerous or so active in the state. In this Junior Class work the National Association joined with the Society in obtaining the services of Henry Oldys, of Silver Springs, Maryland, who lectured day and night throughout the state for a month, everywhere stirring up great interest. Mr. Oldys addressed altogether 24,350 people.

Since September, 1915, the Society has added 252 sustaining members, making its total 2,716, and 86 life members, a total membership of 402. It has four traveling libraries, in charge of Miss Alice G. Chandler of Lancaster, Mass., which are constantly in circulation throughout the state; and its three illustrated traveling lectures are always in demand.

The Society joined with the National Association and the State Department of Agriculture in a bird-protection exhibit at Horticultural Hall; and it has loaned exhibits during the year to scores of bird-clubs, granges, etc., in all parts of this state, and to some in other states. Its permanent exhibit at its office, 66 Newbury Street, Boston, has been very largely attended, and the office force has been constantly busy giving advice and encouragement to those who seek to attract and protect birds.

An evidence of the interest felt in the state was given, when, in November, on the day of the Harvard-Yale football game, 1,000 persons gathered in Ford Hall to hear Herbert K. Job, in charge of the National Association's Department of Applied Ornithology, lecture on his trip with ex-president Roosevelt to the Louisiana bird-rookeries.

The Society also conducted a series of five illustrated lectures at Tremont Temple, in Boston, on Saturday afternoons in March. At least 1,500 people attended each of these lectures, which were illustrated with stereopticon and moving pictures. The lecturers were Howard H. Cleaves, of New York; Prof. Wells W. Cooke, of Washington; William L. Finley, of Oregon; and Louis Agassiz Fuertes, of Ithaca, N. Y.

Again at the annual mass meeting, held in Tremont Temple, 1,500 people gathered to listen to reports of the work of the Society, another lecture by Mr. Job, and bird-imitations by Charles C. Gorst. In addition, the secretary has given lectures, to the number of sixty, all over the state before various organizations, including many large school gatherings, on bird-protection and the work of the State and National Audubon Societies.

The Society investigated, during the year, the conditions at the various lighthouses along the New England coast, fearing the great destruction to bird-life which occurs in migration time at some lights. It is glad to state that the lighthouse keepers reported no such destruction here. Dr. George W. Field, the well-known biologist, offered the use of his large estate at Moose Hill, Sharon, Mass., for a model bird-sanctuary, and the Society plans to so use the estate, which is admirably adapted to the purpose. As the winter came on, the Society joined with the National Association in placarding New England with the request that people feed the birds. The response was immediate and most effective. The Society prints, and distributes free, cloth posters for posting land against shooting; and more than 2,000 were used last year.

Local legislation has been carefully looked after and some bad bills were defeated. An active part was taken in Federal legislation. The secretary believes that the iniquitous proposal to give a month's spring-shooting of water-fowl in the Southwest was defeated largely through the organized efforts of the Massachusetts Audubon Society. It entered vigorously into the campaign that led up to the enactment of the treaty with Canada, in which the two countries join in protecting the migratory birds.

In these and many other matters, the influence of the Society extends far beyond the borders of the state. Its artistic Calendars and educational Charts, for instance, have found sale this past year in nearly every state in the Union and in Canada, and the secretary feels that in many ways, besides its work for the state, the Massachusetts Audubon Society's influence has been a help to that broader, greater work of national scope so well done by the National Association.—Winthrop Packard, *Secretary.*

Michigan Audubon Society.—A large amount of work was planned by the officers of the Michigan Audubon Society for 1916; but when in January the president met with a serious accident, the effects of which confined her to her couch for four months, and the secretary found it impossible to be away from home for any length of time, the plans for active field-work had to be

abandoned. It was then decided to conduct a vigorous campaign, by correspondence, for new members. This was so successfully carried out that the membership was more than tripled between February and July. State game-wardens were especially urged to join, and about twenty became members. The larger part of the more than a thousand letters sent out from the office during the year were written during this campaign. This increased enrollment made our Society feel so rich that it took a membership in the National Association.

The Upper Peninsula having never been visited by Audubon workers, the president was very glad to respond to an invitation in June from a generous and devoted bird-lover, Mrs. A. S. Putman, of Manistique, to do some work in her city with all expenses paid. Talks were given in all the schools there, and at other organizations, and in the nearby villages. The Marquette Normal School was then visited, and the classes in nature-study and agriculture were addressed on the value of birds to agriculture. Twenty lectures were given in this new territory, and thus more than 2,500 persons were reached with the message.

Exhibits of bird-houses, cat-guards, feeding-devices, charts, pictures, and literature were placed at all the large state meetings of teachers, farmers, etc., as well as at county and state fairs. Cat-guards were especially demonstrated before the Wild Life Conservation Association at Saginaw, where several thousand persons visited the Audubon booth every day. 'Cat Tale' circulars, calling attention to the destruction of birds by cats, were distributed in great numbers—in fact about 10,000 of these circulars have been scattered about the state the past year—and the Society hopes by this means to educate the public to the need of a cat-license law, and its proper enforcement.

Farmers are learning to appreciate their bird-friends, and are forming Audubon clubs auxiliary to their own organizations. The president was asked to speak before the lecturers of the State Grange at its annual meeting at Ann Arbor last December; and when she stopped at the expiration of her allotted twenty minutes a vigorous protest arose, and a request was made that the speaker be given time to use the whole sixty slides and give the entire lecture at the main meeting in the auditorium that evening. Here she was greeted by 3,000 farmers—the largest and one of the most enthusiastic audiences before whom she has ever spoken.

The Star Audubon Club of Three Rivers, had a 'tag day' to raise money to carry on the work in their community. The tags were pretty paper birds made by the boys and girls of the Club.

Telegrams and letters were sent to our Congressmen and Senators asking them to work and vote for the measure to sustain the Migratory Bird Law and for the ratification of the treaty between Great Britain and the United States for the enforcement of this law in our country and in Canada. Through the columns of the Audubon Department of *The Michigan Sportsman* we have

been able to reach about 2,000 Michigan men, and tell them the needs of our Society and what it has accomplished for the state.

Wishing to see how effectively an entire county might be organized for bird-protection, the president and secretary have begun to visit every school in that county, and introduce a plan of work embracing the study of a few of our most common birds. Actual observations are to be made and stories written about them; winter-feeding to be done; bird-houses built and placed in the spring; and, when nesting-time comes, cat-guards made and used. Every school is asked to compete for prizes offered for the best stories about actual work done, for best feeding-devices, cat-guards, and houses. The prizes will be awarded at the 1917 county fair, where the results of the contest will be exhibited.

Our Society is expecting opportunities in 1917 for the greatest progress it has ever yet made.—GERTRUDE READING, *Secretary-Treasurer.*

Nebraska Audubon Society.—The past year has been a notable one in the history of the Nebraska Audubon Society. Since the organization in June, 1902, barring the first two years, which were active ones, I may say that we have just kept going—"doing our bit." In October of 1915, however, a reorganization of the Society was effected, regular monthly meetings were resumed, Educational, Membership, and Press committees were appointed, and with enthusiasm we started upon our year's work.

We received hearty coöperation from the Omaha Park Commissioner, the Superintendent of Recreation, the School Board and many teachers, and above all from the Press. By the time of our November meeting our membership had increased fourfold. Monthly meetings continued until June, with increasing members and interest. The Society having suggested that bird-houses be placed in the public parks, the Park Commissioner furnished lumber to the manual-training departments of the public schools, and their supervisor made bird-box building the subject of the whole winter's work. The children of the various public schools made more than four hundred boxes, and an exhibit of them, held at the City Hall, attracted widespread attention. The boxes were placed by the Park Commissioner in the parks and along the boulevards of Omaha. A local merchant offered prizes for the best specimens made by the children, and another good public exhibition was the result. All these latter boxes were made in the homes.

The lecture of Ernest Harold Baynes, on March 11, was a tremendous success. We felt the interest in bird-life in Omaha vastly quickened by Mr. Baynes' visit. In addition to his evening lecture, from which many had to be turned away, Mr. Baynes spoke to a large audience at the Commercial Club's Noonday Luncheon on 'Conservation and Bird-Life.' A bird-picture contest, suggested by the Superintendent of Recreation, was one of the achievements of the year. The Society coöperated with a local bakery company,

which bought and distributed 400,000 bird-pictures of fifty varieties of birds common to Nebraska. One picture was wrapped with every ten-cent loaf of bread. The Society offered $100 in prizes. The contest lasted for two months, and from all over this state, and from Iowa and Missouri, came collections of these pictures. It was pleasing to note that in almost every instance the children requested the return of their collection, and sent postage for it.

The annual field-day was held in conjunction with the Nebraska Ornithologists' Union on May 5, when the composite list observed numbered seventy-eight species. On June 17, 1916, the Society presented Percy MacKaye's

THE BIRD MASQUE AT OMAHA, NEBRASKA
The Faun: "Came Waxwing wild and Warbler wary." Photographed by W. W. Scott

bird-masque 'Sanctuary,' dedicating Omaha's 500-acre bird-sanctuary named 'Child's Point.' In a natural amphitheatre in this beautiful wooded tract, nearly three thousand people witnessed the pageant, and it made a deep and lasting impression.

We are starting on our year's work with even more enthusiasm than ever. The Junior members will hold monthly meetings and have afternoon lectures. The Society has voted to buy 200 suet-baskets to be placed in parks and other proper places. Nebraska birds will be studied this winter in a series of lectures by ornithologists of the University of Nebraska.—Joy Montgomery Higgins, *Secretary*.

New Hampshire Audubon Society.—Our Society has had a year of successful achievement, the work done being nearly twice that of the preceding year. We chronicle an increase of 250 members. The work in organizing Junior Audubon Classes has been notable, 4,425 children having been gathered into 239 classes, just double the number last year. This is a large number for a state with so small a population. A large and varied correspondence has been maintained, and great quantities of literature have been distributed. When

EXHIBIT OF BIRD-BOXES MADE BY SCHOOL-CHILDREN OF NASHUA, NEW HAMPSHIRE, AND ERECTED IN THE LOCAL CEMETERY BIRD-SANCTUARY

the bird-destroyers sought to secure spring-shooting in the Middle States, our Society, in a circular letter, urged its members to make vigorous protests, with the result that hundreds of such protests were sent to Washington. So we had our part in the victory. We also did what we could to help secure the passage in the Senate of the international treaty. The secretary has given seventy-two bird-lectures and addresses before all sorts of audiences, and has been everywhere welcomed.

Many articles for magazines and newspapers have been prepared and published. The cemetery authorities at Nashua have been induced to allow the two large cemeteries to be converted into bird-sanctuaries. One hundred and eight nesting-boxes have been constructed in the manual-training department

of the schools and placed in the cemeteries. A public exhibit of these boxes attracted much attention. The Society is coöperating with the Society for the Protection of New Hampshire Forests with a view of securing the setting aside of the White Mountains National Forest Reservation as a permanent wild-life sanctuary, similar to the Yellowstone National Park. At the annual meeting Prof. Leland Griggs, Ph.D., of Dartmouth College, lectured delightfully on 'Nesting Time.'—MENLEY B. TOWNSEND, *Secretary.*

New Jersey Audubon Society.—The principal activities of this Society for the past year have been in legislative work on behalf of a bill to license cats and a bill to take the Bobolink out of the game class; against a bill to provide a bounty for Crows and Hawks, to be killed at any time of year, in the state; and, in the national field, in behalf of the appropriation for enforcing the Federal Migratory Bird Law and the ratification of the treaty with Canada. We were successful in defeating the bounty bill, but failed to enact the two bills advocated. Educational work has proceeded by furnishing to the press of the state a number of pertinent articles relative to the cause of bird-protection, which were well accepted; twelve lectures delivered by the secretary to associations, clubs and schools; the conducting of the usual campaign, in co-operation with the National Association of Audubon Societies to develop the work of Junior Audubon Classes in the schools of the state; the publishing of five issues of the New Jersey Audubon Bulletin, containing six halftone illustrations; and the coöperating with the Englewood Bird Club in giving an exhibit in Englewood of devices for attracting and fostering birds.

The membership now stands: Patrons, 8; life members, 19; sustaining members, 213; members, 1,058; associate members, 242; junior members, 33,780, total, 35,320. The officers and Board of Trustees are the same as last year.

At the public session of the sixth annual meeting at the Newark Free Public Library, October 3, Howard H. Cleaves, of the Public Museum, New Brighton, N. Y., gave an illustrated lecture on 'Experiences in Photographing Wild Birds,' which was well attended.—B. S. BOWDISH, *Secretary.*

Oregon Audubon Society.—Our Society has had a busy and reasonably profitable year. The Junior work for the state has been conducted through this Society, resulting in a more intimate touch with the teachers, and thereby more enthusiastic and profitable work with the pupils. We have given many popular bird-talks during the season to societies and schools. We are not able to meet all the demands upon us, the requests coming, as they do, from many directions and from long distances. We try to instil a genuine love and appreciation for the subject. For our work in country halls and schools, and because we could not always have the use of lantern-slides, we bought a fine new Bausch-Lomb projectoscope, which carries either slides or colored prints. For this we have made a large collection of prints, well mounted for facility in handling.

Through the courtesy of the secretary of the Young Men's Christian Association, we have the use of a room in its building for our Saturday-evening meetings and popular bird-talks. These meetings are well attended and arouse much interest. T. Gilbert Pearson, of the National Association of Audubon Societies, and Vernon Bailey, of the United States Biological Survey, addressed our members at a meeting in August. In this room we have an exhibit of mounted bird-skins, nests, photographs, prints, etc., which we find useful for study, comparison and illustration.—Emma J. Welty, *Corresponding Secretary.*

Audubon Society of Rhode Island.—In coöperation with the Park Museum, bird-lectures have been given at the Museum to 713 children, and 26 others to 2,879 adults and children at schools or organizations outside the Museum; all of these lectures have been given by the secretary or by the librarian of the Society, Miss Eva W. Magoon. The circulation of the traveling libraries has amounted to 4,823 among 1,136 persons within the state; while the circulation of the Society's permanent library at the Museum has been 2,695 among 400 persons. In coöperation with the National Association of Audubon Societies, 55 new Junior Classes have been formed during the year, representing 1,280 children.

As a direct result of the Junior work, early morning field-trips for bird-study have been conducted throughout the spring, with a total attendance of 275. This field-work for children was conducted at Roger Williams Park, the party with their teacher leaving the Museum at 7 A.M., spending an hour and a half on bird-study, and returning in time for the opening of school. Saturday-morning trips for adults were conducted in Roger Williams Park for two months by Miss Eva W. Magoon and Mrs. Fannie H. Eckstorm. Wednesday-morning trips for adults were conducted by Mrs. H. E. Walter, Miss M. Elizabeth Bates, and Charles H. Abbott. These latter trips were taken in a large park at the northern end of the city.

The most valuable and interesting work of the Society during the past two years has been that done at Block Island by Miss Elizabeth Dickens. Situated directly in the migration-path of the birds, Block Island affords an unusual opportunity for observation. Of special importance is the fact that Miss Dickens has sent valuable records made by herself and her father to the United States Department of Agriculture; Miss Dickens has also made regular monthly visits to the schools of Block Island, in the name of the Audubon Society, and has so interested the pupils in the protection of birds that some of the children have made bits of careful observation, have become extremely interested in bird-banding, have erected bird-boxes, and have been instrumental in creating a strong sentiment for protection of birds. Work of this sort deserves special mention not only because it shows what one person may do in a small community but because the work is being carefully and scientifically done by children.—H. L. Madison, *Secretary.*

South Carolina.—Since January 1, 1916, twenty-seven talks have been given by the secretary on the subject of birds before bird clubs, community clubs, women's organizations, schools and colleges, many of them illustrated by lantern-slides. Programs also have been arranged for women's clubs and schools throughout the state. The secretary gave a six-weeks course in bird-study at the State Summer School, the National Association coöperating with Winthrop College in presenting this course.

Nearly two thousand letters have been written in the interest of bird-conservation, many in answer to requests for information, suggestions, or literature. It is encouraging to report the organization of eleven local bird clubs by Ernest Harold Baynes on his visit to this state. An exhibit in bird-protection was held at the state agricultural fair.

The *piece de resistance* of the year's work is the Society's sixty-nine page report on the 'Decrease of Birds in South Carolina,' which has been issued as a bulletin of the State University. The expense of printing was borne jointly by the University, the National Association, and the State Audubon Society. This report contains evidence of the decrease of birds in this state, a statement of causes, and many valuable suggestions for the better protection of birds. Copies have been sent to members of the legislature, newspapers, game-wardens, members of the Audubon Society, libraries, teachers, women's clubs, farmers, and other interested persons. It promises to shape materially the future policy of game-conservation in this state.—Miss Belle Williams, *Secretary-Treasurer.*

CLUBS AFFILIATED WITH THE NATIONAL ASSOCIATION

Audubon Bird Club of Minneapolis.—Our Club, organized in January, 1915, by Ernest Harold Baynes, has given its attention largely this year to promoting interest and work among the school-children of the city. At the regular monthly afternoon meetings various phases of bird-life and bird-protection have been considered. Papers, book-reviews, and talks were prepared by members of the Club, the program generally closing with a Round Table, or informal discussion, open to all.

We have 125 adult members, and take forty copies of Bird-Lore. Children under sixteen years may become members on payment of 25 cents a year —adult membership dues are $1 a year, or membership with one year's subscription to Bird-Lore, $1.50.

During the summer months outdoor picnic meetings are held in the city parks, or the Club is entertained at the suburban home of some member. Bird-walks have been taken by small companies of the members, other 'hikes' arranged for school-children on Saturday mornings, and several informal talks have been given by different members, during the noon hour, to the young women employed in some of the large manufacturing houses. Such talks have

also been given in various schools, in the women's clubs, and before the Teachers' and Parents' Association of the Public Schools. Our Educational Committee, of which Mrs. Chas. F. Keyes is chairman, has also organized about twenty Junior Bird Clubs in the schools.

In March, with the coöperation of the Woman's Club, Mr. Baynes was engaged to come to Minneapolis and deliver in each of the five high schools an illustrated lecture 'How to Attract the Wild Birds.' Another lecture, 'Wild Animal Neighbors,' was also given before a large and appreciative audience of adults. These lectures proved to be very profitable educationally, and created much enthusiasm for the cause. The newspapers called it 'Bird Week,' several merchants arranged bird-pictures, bird-books, and bird-houses in their windows, and the public was prepared for the next undertaking of the Audubon Club—its second annual Bird Exhibit, which was held from April 3 to 9 by the courtesy of the Dayton Dry Goods Company in the galleries of that store.

This exhibition included the Thomas Libby collection of 500 mounted specimens of birds of the Northwest (which have since been presented to the Audubon Club by Mr. Libby); an extensive line of bird-houses, baths, feeding-stations, cat- and sparrow-traps, and objects loaned. The larger number of bird-houses, however, were made by school-children. Prizes of money, books and charts, subscriptions to Bird-Lore, cameras, field-glasses, etc., being offered to school-children for the best exhibits. Simple, practical bird-houses and feeding-devices were for sale at low prices. A fine collection of colored plates of the birds of North America, made by John James Audubon, was loaned by a local bookseller; the Public Library contributed books; and the Minneapolis Park Board erected a rustic pergola, which with small trees and bushes formed a stage-setting for birds' nests, suet-boxes, etc. Illustrated informal talks about birds were given each afternoon of the week in one of the rooms of the gallery, followed always by a concert of bird-voices from phonographic records. This last attraction vied with the stuffed birds in pleasing and interesting the children, and when the weary members of the Exhibition Committee saw the enthusiasm of these children, coming in crowds every day after school, they felt fully repaid for all their work. Mrs. Lawrence E. Horton was chairman of this committee.

A small exhibit was also held at the State Fair, in September, where information was given and literature distributed.

An Audubon program was given at the Conservation Congress of the State Federation of Women's Clubs, held in Anoka in September. Our president, Mrs. Phelps Wyman, conducted the meeting, and an illustrated lecture on 'Birds of Minnesota' was given by Dietrich Lange of St. Paul. Mrs. Wyman has given considerable assistance, through the Conservation Committee, to other bird clubs within and outside of this state.

The Club has been very fortunate in having influential friends, among them Dr. Thomas S. Roberts, State Ornithologist and bird-student for many

years. Dietrich Lange, Prof. F. L. Washburn, and Frank Blair. Through their kindness and courtesy the Club has been able to have several free lectures, illustrated with fine slides of bird-life. Dr. Roberts has also prepared for the use of the Club a migration blank—a complete check-list of the birds of Hennepin County—which has proved a great help to intelligent observation. The officers are as follows: President, Mrs. Phelps Wyman; Vice-President, Mrs. Jerome P. Jackson; Secretary, Mrs. Judson L. Wicks; Treasurer, Miss Mathilde E. Holtz.—GERTRUDE P. WICKS, *Secretary*.

Beaver (Pa.) Field and Audubon Club.—This Club was organized in March, 1914, for the purpose of natural-history study, and for disseminating knowledge along these lines. From a small gathering of forty at the first meeting, the membership rapidly increased until now about 135 are enrolled.

The Club has planted mulberry trees around the town to furnish food for the birds, and was so successful with the bird-houses set up in parks and private grounds, that, following our example, the manual-training departments of the schools have made and set up 135 houses of different types. Our regular meetings are held on the second Friday evening of each month, and, in seasonable weather, monthly tramps are taken. These are especially well attended during the spring migrations.

We try to have a noteworthy lecture every other month throughout the year, and the intermediate meetings are given up to the reports of our recorders, personal observations, readings from Burroughs, Job, Sharp, etc., and also articles from BIRD-LORE and *The Auk*. We are fortunate in having on our Advisory Board, W. E. Clyde Todd of the Carnegie Museum in Pittsburgh (who is our Honorary President), and he has given us lectures from time to time. We have also had lectures by Professor Randall of the University of Pittsburgh; by Dr. Joseph Kalbfus of the State Game Commission; and by Dr. C. Mace Thomas, of Beaver College, besides many formal talks on the nature-writers by those who know them personally.

Our records are carefully kept by the bird-recorder, and censored by Mr. Todd. Birds observed by members in Beaver County and carefully identified for our three seasons are as follows: 1914, 137; 1915, 122; 1916 (to October 10), 124.

The Bird Committee erected shelters in the woods around Beaver last winter, and fed the birds regularly. At one little feeding-station of bark, 'Barkhaven,' we have counted as many as eleven different kinds of birds feeding, and the food had to be replenished twice a week. The accompanying illustration shows a feeding-shelter just erected by a member. Our annual dues are very small—ten and twenty-five cents—in order that the Club may be open to all, so that not until this year have we felt able to join the Audubon Association. Last April, however, we procured the Association's two-reel film 'Spirit of Audubon,' and had it shown at the local theater, and thus made

enough money to buy books about birds, flowers, moths, and butterflies, which were presented to the Free Library; and we joined the Audubon Association, from which affiliation we are expecting to derive a great deal of benefit.

Next month we are to have a lecture by George L. Fordyce, of Youngstown, with innumerable slides, and in the following month one by Dr. W. J. Holland, director of the Carnegie Museum. Last winter, owing to the bad weather, only one member had the courage to go out for the Christmas Bird-

A WINTER BIRD-SHELTER AND FEEDING-STATION BUILT AND MAINTAINED BY THE BEAVER (PA.) FIELD AND AUDUBON CLUB

Census, making a record of 253 birds of nine species. The flower-recorder has 196 species of flowers collected, analyzed, and classified this season.—Cora French Boulton, *President.*

Bird Club of Long Island (N. Y.).—Since the organization of the Bird Club of Long Island on May 14, 1915, at the residence of Col. Theodore Roosevelt, at Sagamore Hill, Oyster Bay, much has been accomplished in the effort to protect bird-life by the practice of such methods as have been recommended for its preservation and care; and there appears to be no doubt that a work of great importance has been performed by the National Association of Audubon Societies, with the zealous and earnest coöperation of the various clubs affiliated with it throughout the country. This on Long Island has certainly resulted in a noticeable increase in the number of our song-birds, particularly in our own immediate neighborhood, and may therefore indicate that the movement in this vicinity, at least, has not only aroused popular interest, but has already been productive of much benefit, not only by the distribution of

information showing how to attract and care for the bird, but also by a stricter enforcement of the laws enacted for its protection.

The various details of our Club's work the past year may be briefly enumerated as follows: An illustrated lecture was delivered in the early spring to the members of the Club by Ernest Harold Baynes, and later in the season this was repeated for the information and benefit of the public-school children of Oyster Bay. Prizes were offered the school-children for the construction of the best bird-houses, the most satisfactory photographs taken by any child of a wild bird that had been tamed, and the best essays upon the life and protection of birds.

The Executive Committee was represented at the Mineola Fair, held in the fall. It distributed notices and membership-forms, and explained the aims and purposes of the Bird Club to several hundred persons. Bulletins were also sold and many membership-fees obtained. The Executive Committee during the previous season sent to all the members a pamphlet issued by the National Association, containing directions for the care of birds and instructions as to the making and placing of shelters and nesting-boxes, with valuable information concerning the best shrubs and trees to plant to attract birds. Enamel and linen signs were distributed for posting on trees and fences, stating in English and Italian that to molest birds or nests rendered the offender liable to prosecution by the Bird Club. In addition, a printed card was forwarded to every member, containing suggestions for the winter feeding of wild birds and the best foods for such varieties as do not migrate. Members were also supplied with a list of the game-wardens of Long Island and the address of each, and requesting that any violation of the law be at once reported to the Division Chief, at 1451 Broadway, New York City.

A very important feature of the efficient service rendered by our Executive Committee was obtained through the interest and coöperation of Dr. James S. Cooley and Mr. W. C. Mepham, District Superintendents of the Public Schools of Nassau County, as, under an arrangement with the National Association of Audubon Societies, every school contributing $1 to the Bird Club became a unit member, and by the payment of this amount to the Audubon Society received from it such printed matter as might be issued during the year, together with a series of leaflets, pictures of bird-life, and other material for use in school-work, this being furnished in addition to such other information as the Club itself might send out. Every school was also presented, through the generosity of one of the members of the committee, with a copy of a book entitled, 'Birds Every Child Should Know,' a publication that particularly appeals to children and is of great use in familiarizing a child with the Long Island birds, and in creating also an impression of the attraction birds give by their presence in the woods and around the home.

It is interesting to note that the list of public schools enrolled as unit members shows a total attendance of nearly 2,000 pupils, and for these and others

some 6,000 bird-buttons were provided, especially made for the Club and inscribed with its name. It is believed that the foregoing arrangement with the National Association, in conjunction with the valuable and sympathetic aid of the district superintendents, has been instrumental in arousing much interest among the public school-children, and should instil in them a love for the bird and an interest in its care and protection that will prove of widespread advantage in furthering the good work intended.

The Bird Club has become a sustaining member of the National Association of Audubon Societies and will coöperate with it in every way to advance our mutual interests. The cat menace to bird-life has received careful consideration, but while a wide discussion of this subject has as yet brought no conclusive results, it has at least awakened many people to a familiar knowledge of the matter which will probably mean its ultimate solution.

The Executive Committee wisely decided that life-membership fees should be retained for investment, and only the income applied toward general expenses; and in accordance with this decision the sum of $1,500 has already been invested. The treasurer's receipts during the past year amounted to the sum of $2,333.53, leaving a credit balance on July 1, in addition to the foregoing investment of principal, and after the payment of all necessary expenses, of $301.76. It may be interesting to note that the Club is represented in no less than fifty different localities on Long Island, and its influence is therefore widely extended. There are at present some 448 members, of whom 355 are annual subscribers and 93 life members.—(Mrs.) Alice Greenough Townsend, *Secretary*.

Bird Club of Meriden (Conn.)—Our Club was officially organized February 26, 1914, and now has 187 members. We have had regular monthly meetings since the Club was organized, excepting in the summer months, and each winter have put out food and shelter for the birds in the parks and at private homes. We are trying to keep Partridges and Quails in Hubbard Park, and we find that the farmers are showing interest in trying to shelter and keep Quails through the winter. The Grange has shown interest in our Club, and occasionally gives a report of what they are doing for bird-preservation. The Club has had addresses by Mr. Bigelow, Mr. Herbert Job, Mr. Avis, Mr. Sage, and Mr. Crawfton. We have assisted each year in taking a bird-census in this locality.

We have done no legislative work, but I wish we might in connection with other clubs do something to decrease the number of cats in this locality. It seems as if that might be the most helpful thing possible for bird-preservation.

This Club was formally affiliated by membership with the National Association of Audubon Societies on May 13, 1916.—(Mrs.) W. C. Homan, *Secretary*.

Brookline (Mass.) Bird Club.—The third annual report of our Club is one of progress and encouragement along the lines originally planned at the founding of the Club. For adults we have lectures, Round-Table talks and field-walks. For Juniors, field-walks and lectures. We do field-work in co-operation with the Brookline Forestry Department, and maintain an active interest in legislation. Meetings are held twice a month in the Club's room at the Public Library. One meeting is of a formal character, at which a well-known ornithologist lectures on some phase of bird-study, illustrated with lantern-slides. The other is very informal, and consists of a talk by the person in charge of the meeting, followed by an open discussion and questions. The latter is perhaps the more popular of the two, and is called a 'Round-Table' talk. The fact that opportunity is given for the relating of personal experiences and acquaintance-making appeals strongly to those who attend. The Club has been addressed by Winthrop Packard, Edward H. Forbush, Walt McMahon, Charles C. Gorst, and others. These lectures are well attended, and some have proved of such interest that they will be repeated this winter.

The field-walks attract so many enthusiasts that two separate ones are conducted on Saturday afternoons during the spring and summer. One is taken near at home and the other some distance away, thus allowing them to be handled properly. The opportunities presented in this way for practical field-study are so good that the walks are now a feature of the club-work. The Junior members cause considerable study. So many outside interests claim the children's time on Saturday that the Junior walks have not been all the directors hoped they would be. Mr. Horace Taylor, who has charge of this department, has lectured in the grammar schools and led the walks, and the expense has been met from the Club's funds.

A word about the activity of the Brookline Forestry Department is necessary to explain what the town is accomplishing through this department in its work for the birds with the coöperation of the Brookline Bird Club. During the past winter more than a hundred feeding-stations were maintained. One man was kept busy every day in the week traveling from station to station replenishing the food and removing the snow. A large number of Partridges, Pheasants, and Quails, as well as song-birds, lived through the winter that otherwise would have perished. It is a fact that more birds have been seen this past winter than have been seen for years about the town. Those that came regularly to the feeding-stations lost their shyness after a short time, and were always on hand for a meal when the 'food-man' arrived. After a snow-storm at night the birds dug through the snow in the morning to get at the grain that was covered over, and by the time the man arrived the station looked like a chicken-yard. This spring more than 300 nesting-boxes of various types, made by the Forestry Department, were placed in proper places about the town. Useful birds have occupied some of them. Since the closing of the town to gunners the law has been well observed, but, of course, illegal shooting goes

on. 'Sportsmen' drive along the unfrequented roads in their automobiles, and when they sight any birds shoot them if they can and drive away. This type of poacher is the most difficult to catch and deal with.

The Legislative Committee of the Club has done its part in opposing bad and aiding good legislation at the State House. Two members of the Club have appeared at various hearings before the Committee on Fisheries and Game to express the feelings of the Club on all proposed legislation. Whenever it was felt that the Club could aid in the conservation work at Washington, our representatives in the House and Senate have been communicated with.

The directors expect to publish, in a few months, a report of the work of the Club since its beginning. This will contain articles of interest to other bird-clubs and students. Details and plans for bird-exhibitions will be given, suggestions for the proper conducting of club-walks, original field-work with children, and such other matters as pertain to the welfare and success of similar bird clubs.—Charles B. Floyd, *President.*

Budd Lake (N. J.) Nature-Study Club.—Our Club, which now numbers eighteen, and has a membership in the National Association, has been active for bird-protection. We have made a careful study of local birds, and have taken weekly walks to observe them. We have published articles about birds in Newark papers, and we have encouraged groups of children to build bird-houses, and have given of our funds to promote this enterprise. Several members of the Club have collected old bird-nests for schools, and for the Newark Public Library. We have endorsed and circulated every legislative petition sent to us, and we have written in response to every request of the National Association; and any line of work you may suggest we will take up cheerfully and energetically.—(Mrs.) M. L. Cox, *Secretary.*

Buffalo (N. Y.) Audubon Society.—This Society was organized May, 1909, to be of service in bird-protection and bird-study. We have 260 members. When we organized, two-thirds of our members had practically no knowledge of bird-life; today they are all actively engaged in bird-study. We have educated our members to take great interest in advancing good legislation, and when the call for assistance comes, as it has twice of late, first, in preventing spring shooting, and, second, in saving the Lake Malheur Reservation, many of our members write at once to our legislator and influence their friends to write.

The past year we had before the spring migration a course of six study classes, where practical, helpful papers were given, followed by full discussion. Many of our members have become members of the Natural Science Society and hear weekly lectures by the finest speakers.

This Society has published annually for three years a Bird Almanac—a fourth is under way. The Almanac last year netted $183, but we are equally

proud of its educational value. For six years we have published articles on bird-life in our best illustrated Sunday paper during March, April, May, and June, which have made for us many readers and friends. The secretary prepared an article on bird-study for children, and it was published in fourteen papers in Erie County, outside of Buffalo. We paid half the cost of two Martin-houses erected in near-by towns.

More than 100 Junior Audubon societies were organized in Buffalo, and more than 200 in western New York, through the influence of this organization. Every one of the 150 children on the Cattaraugus Indian Reservation was made a Junior member by this Society. The tri-state contest for bird-identification between northeastern Ohio, northern Pennsylvania, and western New York, was won by Western New York with a credit of 215 species of birds between January 1 and July 1, 1916. The Audubon Society of Buffalo sent in a list of 203 birds identified by its members, greatest care as to accuracy being used.

In the winter, T. Gilbert Pearson, the Executive Secretary of the National Association, lectured to our Society, using motion-pictures, and telling of many phases of the work of a national scope.—(Mrs.) G. M. Turner, *Secretary.*

Cocoanut Grove (Fla.) Audubon Society.—Our annual meeting was held on the first Monday in March, when Dr. William Blackman, President of the State Society, spoke on 'Bird Travelers,' and Miss Isabelle Goodhue, in a field-costume of green and brown, gave imitations of notes and songs of birds. We have been active and progressive during the year. A library of bird-books has been begun, and publications of the National Association have been widely distributed. Six prizes were given to children, and also the annual gift to Royal Palm Hummock Park for Audubon work there. A leaflet entitled 'How to Study Birds' has been published, and much interest has been fostered in making the cemeteries of the county bird-sanctuaries. Meetings have been held throughout the year. The study of home-birds has been made the special feature, but many papers on more general topics have been read. The Club felt greatly honored by having William Dutcher accept a life membership in it. The Secretary has lectured to many schools and clubs; has answered many letters of inquiry about birds, sanctuaries, etc., and has complied with all requests from the National Association.—(Mrs.) Kirk Munroe, *President.*

Columbus (Ohio) Audubon Society.—An addition of fifty-four new members was reported at the annual meeting in June, when Prof. C. Hambleton was elected president, and Miss Lucy B. Stone, secretary. Beginning in October, meetings were held each month, except January. In November, Mrs. S. Louise Patteson, of Cleveland, delighted the boys and girls with pictures of the bird-houses and feeding-stations at her home in the woods. Mrs. Patteson

talked in various schools in the city. At the February meeting Dr. Edward L. Rice, of Ohio Wesleyan University, Delaware, Ohio, traced the evolution of bird-life, showing pictures of birds with teeth and birds with long tails. He called attention to the general adaptation of birds to their environment. 'Birds'-Nests' formed the topic for the March meeting, when E. S. Thomas, a former president, showed pictures of nests taken in and about the vicinity of Buckeye Lake. Unusual nests were brought by members to the meeting, and were identified by Mr. Thomas.

Through the Cleveland Bird-Lover's Club the Society was able to hear Henry Oldys in April. Mr. Oldys charmed his hearers with his reproduction of bird-songs. He talked in several of the schools, and as a result Robin, Thrush, and Meadowlark calls were to be heard in the school-yards, and everybody was eager to join the Junior Audubons. Mr. Oldys went with the Society on a field-trip, when White-throats and other birds were whistled up all along the route. After that field-trips were taken once a week until July. An excursion to the country home of a member, Dr. R. D. Woodman, proved one of the most delightful trips. The result of the field-trips has been not only an increase in our knowledge of birds, but in the promotion of fellowship and of interest in the Club.

During the spring migration, Mrs. Robert O. Ryder, the Society's official recorder, published each week in the *Ohio State Journal* a story of the birds to be seen at that time, giving their likely haunts and marks of identification. In fact, the Society is beginning to be recognized as headquarters for information about birds. Frequent calls are received for speakers in schools, or for out-of-town clubs. These are furnished through the efforts of the Society.

Instead of urging persons to join the Columbus Audubon Society, the members are often met with the remark, "We want to belong to the Audubon Society;" or, "Since we have had a country home we have become interested in birds; what do we have to do to join the Audubon Society?"—Lucy B. Stone, *Secretary*.

Cumberland (Md.) Audubon Society.—Our Society became formally affiliated with the National Association of Audubon Societies on July 8, 1916. This action was brought about by a committee of five persons of this city, early in April, in sympathy with the Audubon morals, and desirous that others should be of the same mind. Their efforts culminated in several public meetings, the most enthusiastic being the one before which Miss Katharine Stuart, Field Agent of the National Association for Virginia, gave an illustrated lecture, when nearly thirty of the audience present were enlisted as members of the new society. It became the habit, during the migration season, for a party of members to take walks on Saturday afternoons, for the purpose of studying the feathered creatures in their native haunts, which was found the only true way to fully appreciate bird-life. These jaunts afforded keen pleasure.

Committees on publicity and entertainment were formed, the former preparing news-articles for the local papers regarding various features of interest; the latter promoting the formation of Junior societies in some of our public schools, thereby giving the pupils a chance for bird-study. Our treasurer, Mrs. Edward S. Harris, Sr., has talked and read to the children of her neighborhood, and has instilled in them a respect for living things that has led these boys and girls to think before they wantonly waste anything.

"BIRD GUARDIANS," A MASQUE GIVEN BY THE DOYLESTOWN (PA.) NATURE CLUB

The keynote of the Audubon movement in Cumberland is 'live and let live,' which, although it be applied to wild-life alone, must necessarily react on our human relationships, so that protection and tolerance must mean a more beautiful conception of living.—WILLIAM S. SPARKS, *Assistant Secretary.*

Doylestown (Pa.) Nature Club.—I am sending you a yearbook, also a picture of 'Bird Guardians,' a masque written by Leigh Mitchell Hodges for the Nature Club in the interest of bird-life, and presented in the open once in Doylestown and once at Chestnut Hill, to several hundred people. The Nature Club has started three bird-sanctuaries, and for two years has had an appropriation from the State Game Commission for feeding the winter birds, which was done during the blizzards and severe weather. During one of our severest snow-storms last winter the committee on bird-protection faced a blinding snow, and waded in drifts up to their waists, in reaching one of our suburban

sanctuaries, to place food in the feeding-boxes. We have proof that Quails were saved by our systematic feeding during the freezing weather.

We have a petition before Council, asking to have stray cats eliminated. Live-pigeon shooting by the Rod and Gun Club of Doylestown has been abolished at our request. Early (4 A.M.) morning walks in the spring enable us to study migrations, and a night spent in the woods not only tested our nerves but familiarized us with animal life not visible in the daytime. The planting of trees on Arbor Days is primarily for the benefit of the birds.

Our membership has increased from 7 to 127 in ten years, and members range in age from ten years to seventy-five. Our aim is to interest the young, and we hold most of our illustrated lectures in the public schools and invite the pupils to attend. One of our bird-sanctuaries is situated in the cemetery, which is particularly adapted to that purpose, having plenty of water and shade trees.—Elizabeth F. James, *President.*

Forest Hills Gardens (N. Y.) Audubon Society.—This Society was founded on the supposition that bird-protection is a legitimate extension of the Garden City idea, and that both from economic and esthetic standpoints nothing could be more fitting than that the garden suburb should also be a bird-sanctuary, because it is an attempt to retain and create within the artificial limitations of the city the wholesomeness and quality of country life. It is scarcely necessary to say that the landscape-setting—flowers, shrubbery, vines, trees, hedges—needs the further embellishment of the 'hovring melody of birds.' This is the esthetic side. The economic side is the general recognition throughout the country that America must conserve her avian wild life in order that insect pests should be subdued.

The work begun by the Forest Hills Society had peculiar difficulties because the place was new, there was constant building going on, and little cover for the birds. There were also, and still are, a large number of English Sparrows, and the cat problem is a difficult one. In spite of all this the number and variety of the birds have sensibly increased, and owing to educational work being done by the Society there is a greater general interest in the subject. A preliminary survey of the property was made by Herbert K. Job, and a Forest Hills Branch of the National Association of Audubon Societies was organized in April, 1914, with about eighty members. Public lectures and meetings followed, bird-boxes were put up, winter-feeding begun, fountains and bird-baths were made a part of the individual house and garden plan wherever possible, shrubbery was planted with a view to future cover, some work was done among school-children in the way of special lectures, Audubon literature was distributed, and a Journeyman's Class of boys was formed to make and sell bird-houses. One of the boys won the *Brooklyn Eagle's* gold medal for Kings County in a recent bird-house competition. Perhaps most interesting of all are the bulletin boards specially designed and presented to the Society by the

A BIRD-FOUNTAIN ERECTED BY THE FOREST HILLS GARDENS AUDUBON SOCIETY

Sage Foundation Homes Company, which are attached to the lamp-posts at ten important street-corners, and upon which bird notes are posted weekly in the spring and fall.

The Society owes much to its president, now unfortunately about to resign, Mr. E. A. Quarles, vice-president of the American Game Protective Association, under whose expert guidance the work of the Gardens was begun. —Mary E. Knevels, *Secretary*.

Groton (Mass.) Bird Club.—This Club was organized at a meeting of about thirty-five interested persons on December 15, 1913. About ten days previous a well-attended public meeting in the Town Hall had been addressed by Ernest Harold Baynes, who graphically described and pictured the methods used and the results obtained by the Meriden Bird Club, which he had founded. It is upon this club that the Groton Bird Club, as well as many other similar organizations, is patterned.

After the adoption of a constitution and election of officers, the first meeting of the Club adjourned, and the Board of Directors met to plan the work to be done. The president was directed to appoint committees on winter-feeding and on nesting-boxes. Miss Gertrude Gerrish was appointed to take charge of the Junior department. This appointment subsequently proved to be the most important action taken at the meeting, for the most effective work which the Club has accomplished thus far has unquestionably been the arousing of interest in birds among the children. At this meeting of the Board of Directors it was decided to make the reading of a paper by some one person, a member preferably, a regular feature of the monthly meetings, this to be followed by a comparison of notes by all members present. In practice, however, it has been found necessary to procure outside talent to a large extent to address the meetings; and the Club has been fortunate in having many interesting speakers who have been willing to come to Groton for their expenses only. Among these have been Dr. John May, Frederic H. Kennard, Charles B. Floyd, Rev. Manley Townsend, Henry Oldys, and Winthrop Packard. In addition to the regular Club meeting, a public meeting in November, 1914, under the joint auspices of the Grange and the Bird Club, was addressed by Mr. Forbush, and was well attended, and at another, in February, 1916, Herbert K. Job showed his wonderful moving pictures to a large audience.

The Committee on Nesting-boxes was able, through the generosity of a member of the Club, to place about forty-five boxes on the public common and along the main highways. Though it was feared that the situations chosen would not prove very favorable, it was felt by the committee that, in view of the semi-public character of the Club, these boxes should be placed in public places rather than on private grounds. Through the Club's initiative, however, a considerable number of boxes were purchased and sold to members at cost, encouraging private enterprise. Results the first season have not been all

that were hoped for, but a fair number of the private boxes were nested in. The second season showed an increased number of native birds using the Club boxes. Certain individuals who had gone ahead with their own boxes independently of the Club had marked success in attracting the birds to them.

Other activities of the Club have included going on record in favor of the bill to provide for the licensing of cats, and calling this fact to the attention of our Senator and Representative; and securing the appointment of a local fish-and-game warden at the nominal salary of $50 a year, under the provisions of a recent law. The Club has also installed a cement bird-bath and a feeding-station on the Common, in front of the Unitarian Church. Many birds used it last summer.

As before stated, the officers of the Club feel that its most important work has been among the children, nearly 100 of whom hold Junior memberships. They have formed their own organization, with duly elected officers, and now pay annual dues into their own treasury. They have thus provided themselves with Club buttons, paid for the use of their meeting-places during cold weather, and met other necessary expenses, with some help from the parent Club. Prizes offered by an anonymous benefactor have served greatly to stimulate observation and study of birds by the children; and sums contributed from time to time by others have made possible small entertainments, which have proved important in stimulating the interest of the children in their organization.

All the meetings of the Club are fully reported in the local papers, and in this way its activities are kept constantly before the public. It is believed that this publicity has great value in furthering the objects for which the Club is striving. The editors have generously given any space required, from a small paragraph to a column and a half; and as a result of their interest and good will the doings of the Club have come to the attention of persons in all the neighboring towns, and have been mentioned in at least one of the prominent farm journals, *The New England Homestead*. Thus the leaven, we hope, is working even outside the normal sphere of influence.—William P. Wharton, *President*.

Hartford (Conn.) Bird-Study Club.—The seventh year of our Club (organized May 18, 1909) has been very successful in the amount of progressive work accomplished and the public interest aroused in bird-study and protection.

During the last year the work of our Educational Committee advanced beyond its infant stage, as bird-lectures, illustrated by mounted specimens, were delivered to more than 700 school-children in Hartford County. This year the Committee has been enlarged from five to twelve members, and its work as planned has advanced to an adult stage. This year three lectures on birds will be given to the sixth-grade pupils in the Hartford schools. Forty-

minute addresses on three days a week during the school year will be made by members of this committee.

Our Club has done a great deal in the past to build up a strong public sentiment in favor of bird-protection by publishing in the newspapers accounts of its meetings, giving outlines of the addresses.

We have a bird-sanctuary of about 2,500 acres situated south of Hartford on and near Cedar Mountain; and a member, Dr. Ansel G. Cook, secured for us the free use of the 70 acres owned by the Children's Aid Society. The Club has agreed to equip the sanctuary at its own expense with such bird-houses, shelters, feeding-trays, bird-baths, fountains, etc., as may be necessary, such equipment to remain the property of the Club; and furthermore to provide a competent person to take charge of the property, who shall visit the sanctuary regularly at least once a month. The agreement is for a period of ten years and contains other items in regard to the rights of both parties. The agreement made with thirty owners of other tracts of land in the sanctuary is not so elaborate. Besides the clause in regard to cancellation of agreement it is as follows: "I hereby grant to the Hartford Bird-Study Club, acting through its Sanctuary Committee in conjunction with the Fish and Game Commission of Connecticut, the right to post signs and use such means as may in their opinion be necessary to attract and protect wild birds upon my land." Other members of the Sanctuary Committee have been making bird-houses, so that more than 100 were made and mounted on gas-pipes last spring. Shrubs and trees have been planted or transplanted to provide food and protection. The first consignment of Pheasants from the state game farm were liberated at the sanctuary in August, 1916; other birds are to follow.

We thought last year we had issued the best 'yearbook' we possibly could, but we think that this year's is ahead of that. It provides for nineteen field-meetings aside from suggestions for Christmas and New Year's Day censuses. Twenty regular meetings are planned for, at which papers are to be read and field-notes given. Four illustrated lectures are also arranged for.

The Records Committee consists of the presidents, honorary, past, and present, and all records are carefully examined before being placed in our book, and unusual observations are carefully investigated before they are given a place. Our composite list of birds has reached 213. Our yearly composite list has passed the 180 mark.

Our field-meetings are so planned that at most of them some of the rare birds may be seen, but the field-meeting held at Bristol on Saturday, October 14, 1916, was unusual in regard to breaking the records not only of Connecticut, but of New York. On May 20, 1916, our Club took a census of the birds in Hartford and vicinity, and positively identified 127 varieties.—Edwin H. Munger, *President.*

Los Angeles Audubon Society.—Our Society was established March 2, 1910, and holds an average membership of over 50; at present it has 54 members. It is affiliated with the State Federation of Women's Clubs, and with the National Association of Audubon Societies. It has held, during the past year, eight program meetings in the museum in Exposition Park, eight field-day meetings, about equally divided between cañons and beaches, two picnics, and one meeting and picnic as a guest of the Pasadena Audubon Society.

The programs have included the subject of bird-migration; a lecture on local birds by Mrs. F. T. Bicknell, illustrated with lantern-slides made from her own photographs; two lectures by Prof. Alfred Cookman on 'The Varied Developments and Characteristics of Bird-life' and on 'Hummingbirds.' Doctor

MEMBERS OF THE LOS ANGELES AUDUBON SOCIETY ON A BIRD-WALK

Dial, of Hollywood, told us of our 'Winter Visitants;' Mrs. Harriet Williams Meyers gave us a reading descriptive of bird-life in her own garden; Professor Wyman of the Museum gave a talk on 'Bird Calls;' another member gave a fine paper on the 'Life of Audubon;' and others contributed interesting facts and experiences.

A leader is always chosen for the field-meetings, and someone to take notes and make a report at the next indoor meeting. By the courtesy of the Curator of the Museum we are allowed the 'skins' to illustrate birds spoken of.

One member attends to all publicity work, putting notices of all meetings in local newspapers, and reports of our work from time to time. Cordial invitations are extended to strangers and we have been favored with many visitors, among them Dr. T. S. Palmer, who gave us an interesting talk at our field-meeting in Eagle Rock Park in June, 1916.

We headed the list in the annual Christmas bird-census report of 1915, our members having identified 121 species on December 26, 1915. Some members have secured fine specimens for the Museum—birds dead or disabled. A Great Blue Heron, an American Bittern, and a Russet-backed Thrush have been mounted and placed in cases, and a Surf Scoter, a Cassin's Auklet and a Dusky Shearwater have been added to the collection of skins.

We are proud to report the publication of our president's fine article in Bird-Lore (January–February, 1916) entitled 'California Brown Pelicans,' illustrated by her own photographs. In the same number was another paper by one of our members, John V. Fredericks, on the 'Mockingbird.'

We have used out best efforts in assisting the State Society in all legislative work. We appointed two game-wardens to look after local bird-protection, complaints, etc. Some of our best-informed members have talked about birds before schools and Audubon societies in nearby towns, sometimes illustrating with pictures and lantern-slides. Our new work will be along the lines of the economic value of birds, their use to the farmer, etc.—(Mrs.) George H. Crane, *Secretary*.

Meriden (N. H.) Bird Club.—The chief activity of the Meriden Bird Club during the past year has been in the direction of organizing other bird clubs having the same general objects in view. As the result of lectures on the Meriden Bird Club delivered by Ernest Harold Baynes, and through the presentation of Percy MacKaye's bird-masque, 'Sanctuary,' the writing of which was inspired by the work of this organization, about 200 bird clubs have been organized in the following states: New Hampshire, Vermont, Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Kentucky, Indiana, Illinois, Missouri, Michigan, Wisconsin, Minnesota, and Texas. The membership of some of these clubs is already in the thousands, and some of them have already established bird-sanctuaries. It is Mr. Baynes' purpose to federate as many as possible of these bird clubs under the banner of the National Association of Audubon Societies.

In addition to the above, the Meriden Bird Club has made many improvements in its bird-sanctuary. Many trees, shrubs, creepers, and wild flowers have been planted, bird-baths installed, footpaths cut, and the nucleus of a little ornithological museum started—all this work having been done under the supervision of the superintendent, Walter M. Buswell. A census of the breeding birds in the sanctuary shows that the population has more than doubled since the refuge was established five years ago. During the course of the summer hundreds of people have visited the sanctuary, and gone away inspired to do similar work in their own towns.

Monthly meetings have been held under the management of the secretary, Miss Elizabeth F. Bennett, whose plan was to appoint an entertainment com-

mittee of twelve, each member of which was made responsible for one program during the year. In the main this plan was successful, and will probably be repeated the coming year. The secretary has also attended to a large correspondence concerning various phases of bird-conservation, and has dispensed information on this subject to practically every state in the Union, and to many parts of Canada.—Elizabeth F. Bennett, *Secretary.*

Michigan City (Ind.) Bird Club.—About the first work that presented itself to our Club at the beginning of the past year, was the task of finding out what real dependable enthusiasm for birds the vicinity could offer us, and of creating interest in quarters apparently barren of such enthusiasm. It was easy to find some splendid boys ready to work, and they were at once organized and affiliated as Junior Audubon workers. Then some senior members made several large and interesting posters of bird-pictures and bird-facts. The president of the Club went before as many of the public school-teachers as she could reach, gave practical bird-talks, and circulated the posters. We were able during the winter to give talks also before a local fruit-growers' association and a large grange. As a direct result the managers of the Agricultural Association inserted into their yearly premium-list an ornithological department. Contests in essays and in model bird-houses gave our Juniors a chance to win premiums. During the early spring one of our theatres ran a series of bird-films, the best of which was the National Audubon Association's 'The Spirit of Audubon.'

Throughout the entire year our press secretary has kept a series of bird-articles running in one or more newspapers. The manual-training department of the public schools gave us hearty coöperation in planning bird-houses, and our first exhibit in the early spring was successful enough to encourage us to have a much larger exhibit this fall. Before the close of the public schools we were able to have Mrs. Etta Wilson here for several days of earnest work in all the grades and one or two public lectures. It was most fortunate for us that the Chautauqua season brought to us Ernest Harold Baynes and the 'Bird Masque.' He accomplished much that could not have been done by local workers. The Club members are making a careful study of all birds seen in the vicinity, hoping to compile valuable data.—Alice M. Belden, *Secretary.*

Outdoor Club of Fitchburg (Mass.).—The Outdoor Club has not been very active as an organization the past year, but individual members have kept up their interest and enthusiasm, taking weekly walks, establishing winter feeding-boxes, looking after the posting of some favorite bird-haunts, etc. As a Club we have responded to all appeals of the National Association of Audubon Societies for influencing legislation. During the winter we formed a study class, taking up the evolution of plants, under the leadership of a member of the Club.—Grace F. Barnes, *Secretary.*

Rock Island County (Ill.) Bird Club.—We were not formally organized until January 20, 1916, but even in this short time enough has been accomplished to augur well for the future. There is much evidence that the cause of bird-protection is bearing fruit. Birds are becoming very numerous around our homes and exceedingly tame; bird-boxes abound everywhere, as well as drinking-fountains and, during the winter, food-shelves. Through the coöperation of our County Superintendent, and the city principals of Rock Island and Moline, bird-clubs have been organized in many of the city and rural schools. Already we have a membership of over 1,500, including the member-clubs in the various city and county schools. One Rock Island school-club numbers nearly 200; another in Moline about 250. This work of organizing is still going on, and an active campaign is planned for this fall. Through the coöperation of city officials and the Humane Society, the few complaints of nest-robbing and shooting have been investigated. These are growing less each year.

The Club is fortunate in having for its president Mr. Burtis H. Wilson, a man well qualified for the management of such an organization. Mr. Wilson has made a study of birds since boyhood, and his lectures at the schools and churches of the county have aroused and stimulated interest in bird-protection and conservation. He has also lectured at the Y. M. C. A.'s of Moline and Rock Island, officers of which are working faithfully with our Club. The boys' departments of the Y. M. C. A. have been greatly interested in the work, also the Boy Scouts.

We have taken active interest in the legislative work at Washington, and have telegraphed and written to senators, representatives, and officials interested in the Migratory Bird Law, the Canadian treaty, the new game laws, the draining of Lake Malheur in Oregon, and other items.—Nellie E. Peetz, *Secretary.*

Rumson (N. J.) Bird Club.—This Club was organized in June, 1916. It comprises four classes of membership: Patrons, $10 annually; active, $5 annually; permanent (or native residents), $1 annually; Juniors, 25 cents annually. The officers of the Club are as follows: Ira Barrows, President; Colonel William Barbour, Vice-President; Henry A. Caesar, Treasurer; Mrs. George A. H. Churchill, Secretary. The Executive Committee is composed of the officers, *ex-officio*, together with Edward D. Adams, Rev. Arthur McKay, Miss Grace Porter, Mrs. Reuel B. Kimball, and Mrs. Robert H. McCarter. Our annual meeting is held on the second Saturday evening in October. We already have a membership of more than 100 and have collected upward of $500 in dues, etc.

Three lecturers have appeared before the members of the Club. These were Lee C. Crandall of the Zoölogical Park in New York; Herbert K. Job, associated with the National Association of Audubon Societies, and T. Gilbert Pearson, Secretary of the National Association of Audubon Societies. We pro-

pose to arrange for two or three lectures during the coming winter, in order that there may be a continual stimulus given to birds and their protection. We are seriously considering employing a game-keeper whose business it will be to stimulate not only active interest in birds among the summer residents of the borough of Rumson, but among the natives and school-children as well.—Ira Barrows, *President.*

Seattle (Wash.) Audubon Society.—This Society was organized in April, 1916, and affiliated with the national organization in August, during the time of T. Gilbert Pearson's visit to Seattle. There are at present 114 members. Field-walks were taken each month during the summer to acquaint the members with our local birds. Formal addresses have been made before the Society by Prof. Trevor Kincaid on 'Economic Value of Birds'; by Adelaide Pollock on 'The Birds of Puget Sound'; by S. F. Rathbun on 'Bird Migration;' and by T. Gilbert Pearson on 'The History and Work of the Audubon Movement.'

Through the Superintendent of Schools the following extract from the Washington Audubon law was read and posted in each school-room in the city, and through the Park Superintendent the same notice was posted at our park entrances:

"SESSION LAWS OF 1903, CHAPTER 134"

"Sec. 2. No person shall, within the State of Washington, take or needlessly destroy the nest or the eggs of any wild bird other than a game bird, or have such nest or eggs in his or her possession.

"Sec. 3. Any person who violates any of the provisions of this act shall be guilty of a misdemeanor, and shall be liable to a fine of not less than ten nor more than one hundred dollars for each offense, and an additional fine of one dollar for each bird, living or dead, or part of bird or nest, or set of eggs, or part thereof, possessed in violation of this act, together with the costs of prosecuting in such action, or to imprisonment for thirty days in the county jail, or both, at the discretion of the court."

We are planning for a bird-exhibit in February, and are offering two prizes to pupils for the best essays on 'Bird-Protection.'—Mrs. Charles Crickmore, *President.*

Sewickley Valley (Pa.) Audubon Society.—This Society was organized on April 28, 1914, and has now 234 members. We became affiliated with the National Association on June 12, 1914.

The past year, under the administration of President C. B. Horton, has been one of unusual activity and interest. Ernest Harold Baynes gave an illustrated lecture to the Society in the early winter, and his suggestions for feeding and attracting birds were widely adopted. An illustrated lecture by W. S. Thomas (City Ornithologist of Pittsburgh) in the early spring was a timely aid to the still further placing of bird-houses. From the middle of May until the

middle of June the services of Henry M. Oldys were employed for lectures, study-classes, and outings. Morning field-walks were conducted twice a week for six weeks from the beginning of May until the middle of June, and were so popular that a few outings began at 4 A. M., and several twilight walks were made for the convenience of business men. Before Mr. Oldys's arrival, and to make his lectures and outings more fully appreciated, several study-classes were held in the public schools for children in the afternoon, and for adults in the evenings. Bird-specimens from the Carnegie Museum in Pittsburgh were loaned for these classes by the Director, Dr. W. J. Hoffman, and proved of great assistance in interesting the young people.

The manual-training classes in the public schools continue to turn out bird-houses, which are evidently appreciated by the community, and we hope by the birds as well, since few gardens, however small, are seen without a bird-house or two.

The request from the National Association to protest against the extending of the hunting season for birds has been complied with, and an encouraging reply received. Protest has also been made to the Secretary of the Interior against draining Malheur Lake in Oregon. Reports of our Committee on Observation and Records are still being made to the United States Biological Survey in Washington.—(Mrs.) M. G. Rose, *Secretary.*

Somerset Hills (N. J.) Bird Club.—The fourth year of the existence of the Somerset Hills Bird Club was one of success. Its membership was increased from 62 to 98, and several new subscribers were enrolled for its official organ, *The Oriole;* but it was unfortunately necessary to delay the publication of the magazine to October and December ,instead of issuing it in June. In the spring the Club purchased more than 100 nesting-boxes of various types and erected them in suitable localities. The success of this experiment is still in doubt, owing to the fact that the boxes were not up until slightly too late for their use this year by most birds. Wrens nested in several of them, but in many cases were driven out by Sparrows. The Club is planning to provide food for the game and insectivorous birds of the community during the coming winter, and is hoping for additional aid from individuals.—J. Dryden Kuser. *President.*

Utica (N. Y.) Bird Club.—This Club is the Science Department of the New Century Club, which has many enthusiastic bird-lovers. Requests sent to us to write to Washington in the interests of desirable legislation or governmental action have always been presented to the Club, and the necessary telegrams or letters were sent by Club officials. Three such have been acted upon recently. The leader of the Science Department will be glad to distribute copies of the valuable circulars of the National Association at one of the Department meetings.—Elizabeth G. Brown, *Secretary.*

Vassar Wake-Robin Club.—Our Club was first organized about 1890 for the purpose of nature-study. It was reorganized in 1916 with the additional purpose of active care and protection of birds. In January, 1916, we became affiliated with the National Association of Audubon Societies. As efforts in this direction, we fed the birds on the Vassar campus last winter, and purchased a number of Von Berlepsch nesting-boxes. Every spring we pay a visit to John Burroughs at 'Slabsides,' and we have informal walks for bird-study frequently during the college year.—Anne H. Whiting, *President.*

Vermilion (S. D.) Audubon Society.—Our Society was formed March 28, 1916, and now has thirteen active members and 137 junior members. Bird-talks have been given by members of the Society, bird-walks have been taken, and reports made. In April a bird-house contest was held, when thirty-five houses were submitted and three prizes given. A movement is now on foot to induce the Vermilion city council to enact an adequate ordinance permitting the destruction of song-bird enemies within the city limits.—(Mrs.) Q. C. Kellogg, *Secretary.*

Washington State Federation of Women's Clubs.— The State Federation of Washington gave a place on its annual program to an address on birds, and an educational exhibit of bird-material was maintained during its sessions. The legislation affecting birds in which we have been most deeply interested is an act setting apart a portion of our State's game-fund for protective educational work. This we hope will come before the Legislature at its next session.

Through the coöperation of the National Audubon Society in giving us a field-worker for a time last year, we have been able to accomplish so much of progress in bird-welfare that our Society is constantly in receipt of requests from women's clubs in other states for printed matter outlining our methods of work. Some of our auxiliaries declared their accomplishments in bird-protection to be the most worth-while of anything they have done during the year. Our zeal in this direction has hastened the organization of local bird clubs in many localities, and has quickened the interest and directed the attention of whole communities to the need of bird-conservation. We feel that, on account of the similarity of the aims and purposes of our organization to those of the National Audubon Society, there is a peculiar fitness in being affiliated with it, as we are, in its task.—(Mrs.) Ira D. Cardiff, *Corresponding Secretary.*

Watertown (N. Y.) Bird Club.—Our Club was organized in January, 1915, after an illustrated lecture by Mr. Baynes. We began with thirty charter members, many of them previously members of a sportsmen's club, and of a bird-lover's circle. Edmund J. Sawyer, artist, author, and ornithologist, became the first president, and has since been made honorary president. In March,

Charles Gorst, of Boston, gave us a delightful entertainment with his imitations of bird-songs. In May, 100 lantern-slides of birds were procured from Albany and shown to the local Boy Scouts. Mr. Sawyer described the land-birds, and F. S. Tisdale the water-birds. During the winter of 1915-16 the club was divided into small groups for field-study under Mr. Sawyer's leadership. At the regular meetings talks and papers were given by members on personal experiences with bird-identification. In April, Mrs. G. D. Gregor opened her home to the Club, and a program on bird-music was enjoyed.

In June, the *Watertown Daily Times* coöperated with the Bird Club in a publicity campaign on the 'Squirrel Question.' The gray squirrels, imported several years ago for our park, have proved a menace to bird-life in the shade trees of the city. As the state laws protect the life of the squirrels, it was decided to trap them, carry them to some distant woods, and there liberate them. The Club is taking steps to secure a license for cats in order to decrease the number of homeless ones. The Sparrow debate has waxed hot, but no action has been taken by the Club.

In June, the Club assisted Mr. Sawyer in giving a Loan Exhibit of more than 1,000 of his original drawings and water-colors of birds and bird-life. This exhibit was greatly enjoyed and received much favorable comment in the local press. The proceeds from it were used toward defraying the expense of the publication of Mr. Sawyer's book 'Land Birds of Northern New York,' which came from the press in July, printed under the auspices of the Watertown Bird Club.

At the annual meeting, F. S. Tisdale, Superintendent of the Watertown Schools, was elected president, and E. W. Elsworth, 235 Ten Eyck Street, secretary.—Antcinette Rogers, *Secretary.*

Winston-Salem (N. C.) Audubon Society.—Our Society was organized on February 15, 1916, with about twenty members. The president appointed committees on membership, program, publicity, and field-work, and all of them have been doing good work for the Society. Our meetings are held once a month, and are made very interesting by papers read on various phases of bird-life and protection. Our committee on field-work has given us much entertaining and instructive information discovered among the bird-life of our own community. Our members have put up nest-boxes and feeding-stations for the birds, and have been amply rewarded by the increase of bird-neighbors. Some of us also have been trapping the English Sparrows with good results, one boy having caught nearly 200 of these pests. During the summer we had the great pleasure of hearing Ernest Harold Baynes deliver his interesting lecture 'My Wild Bird Guests' at our local Chatauqua, and as a direct result of his assistance our Society was enabled to enroll thirty-three new members, and the whole subject of bird-study and protection received a new impetus in the community. We have placed the magazine Bird-Lore in the public library,

and have also been instrumental in securing for the library a set of John Burroughs's books, and several books on the study of birds by H. K. Job and others.

We now have seventy members enrolled, and are planning to extend our work and influence into the country schools. The teachers of the city graded schools are among our most enthusiastic bird-students, and they have already organized several Junior Classes.—H. W. Foltz, *Corresponding Secretary.*

Wyncote (Pa.) Bird Club.—The Wyncote Bird Club was organized in April, 1914, by Ernest Harold Baynes, and has constantly increased in member-

JUNIOR MEMBERS OF THE WYNCOTE (PA.) BIRD CLUB ERECTING A BIRD-HOUSE. IT WAS OCCUPIED LATER BY BLUEBIRDS

ship till now there are 119 members. Evening meetings are held monthly. Usually a local bird-student gives a talk on some phase of bird-life, and several times members have shown stereopticon slides from their own photographs of birds or of the activities of the Club. Indoor meetings of the Club are held for the Juniors every month during the winter, when bird-nest boxes and feeding-devices are made, and the Audubon leaflets are colored and studied. There is always a good attendance, so that it has become necessary to restrict these meetings to members only. The young folks are taken on bird-walks. Some of the bird-boxes made in winter are erected during these walks, and there is great excitement when in June they are found to be occupied by Wrens and Bluebirds.

We have had several good lectures by outside speakers. Mr. Baynes very

generously gave us several lectures while in Wyncote visiting relatives. Dr. Samuel C. Palmer, of Swarthmore College, S. F. Aaron, and Mrs. S. Louise Patteson have lectured, and have been much appreciated. Excellent articles on bird-life by E. H. Parry, one of our members, have for the past year appeared weekly in the local newspaper. Under the auspices of the Club the local moving-picture theatre presented the National Association's two-reel film, 'The Spirit of Audubon.' This was seen by at least 1,000 people, and its influence was immediately felt, as several other bird clubs were planned within a week.

Several feeding-stations have been supported by the Club, and regularly supplied with food which the state of Pennsylvania has helped us to buy, while many of the members have endeavored to make their gardens bird-sanctuaries. Since the organization of the Club the community has awakened to the value of birds, and we believe that children instructed in bird-lore, and taught to protect the birds, are going to make better citizens for this training.— Esther Heacock, *Corresponding Secretary.*

JOHN H. KOCH & COMPANY, Certified Public Accountants
Liberty Tower, 55 Liberty Street, New York

New York, October 24, 1916.

The Audit Committee,
National Association of Audubon Societies,
1974 Broadway, New York, N. Y.

Dear Sirs:—We have completed our customary examination of the books, accounts and records of the National Association of Audubon Societies for the year ended October 19, 1916, and present the following Exhibits for your consideration, viz.:

Exhibit A—Balance Sheet October 19, 1916.
Exhibit B—Income and Expense Account, General Fund.
Exhibit C—Income and Expense, Sage Fund.
Exhibit D—Income and Expense, Egret Fund.
Exhibit E—Income and Expense, Children's Educational Fund.
Exhibit F—Income and Expense, Department of Applied Ornithology.
Exhibit G—Statement of Receipts and Disbursements.

Our examination embraced a verification of all disbursements which were substantiated either by approved receipted vouchers or cancelled, endorsed checks.

We attended at the Safe Deposit Company's vaults and examined all investment securities, which were found in order.

Submitting the foregoing, we are

Very truly yours,
JOHN H. KOCH & CO.
Certified Public Accountants.

The Report of the Treasurer of the National Association of Audubon Societies, for Year Ending October 19, 1916

Exhibit A

ASSETS

Cash in Banks and Office		$19,649 10
Furniture and Fixtures—		
Balance October 19, 1915	$1,615 72	
Purchased this year	307 67	
	$1,923 39	
Less—Depreciation	192 34	
		1,731 05
Inventory of Plates, etc. (Nominal Value)		500 00
Bird Island Purchase, Orange Lake, Fla.		250 20
Buzzard Island, S. C.		300 00
Audubon Boats—		
Balance October 19, 1915	$2,792 33	
Additions this year	650 00	
	$3,442 33	
Less—Depreciation	344 23	
		3,098 10
Investments, Endowment Fund—		
Bonds and Mortgages on Manhattan Real Estate	$377,400 00	
U. S. Mortgage & Trust Co. Bonds	3,000 00	
Manhattan Beach Securities Co.	2,000 00	
		382,400 00
Investments, Mary Dutcher Memorial Fund—		
Bond and Mortgages on Manhattan Real Estate		7,100 00
Accounts Receivable—		
Bond Interest Receivable		120 00
		$415,148 45

LIABILITIES

Endowment Fund—		
Balance October 19, 1915	$371,865 41	
Received from Bequests	4,159 48	
Received from Life Members	11,025 00	
Received from Gifts	210 00	
		$387,259 89
Mary Dutcher Memorial Fund—		
Balance October 19, 1915		7,737 70
Special Funds—		
Mrs. Russell Sage Fund, Exhibit C	$4,123 87	
Egret Protection Fund, Exhibit D	331 91	
Children's Educational Fund, Northern States, Exhibit E	9,274 25	
Department of Applied Ornithology, Exhibit F	423 98	
		14,154 01
Surplus—		
Surplus beginning of year	$5,333 38	
Balance from Income Account	663 47	
		5,996 85
		$415,148 45

INCOME AND EXPENSE ACCOUNT—General Fund

EXPENSE

Exhibit B

Warden Service and Reservations—		
Salaries	$1,210 00	
Launch and Reservation Expenses	1,551 07	
		$2,761 07
Legislation—		
New York	$50 00	
U. S. Migratory Bird Law	141 70	
Virginia	100 00	
Massachusetts	4,231 93	
		4,523 63
Educational Effort—		
Administrative Expenses	$6,613 32	
Field Agents, Salaries and Expenses	4,422 56	
Bird-Lore, extra pages and Annual Reports	1,404 75	
Printing, Office and Field Agents	725 28	
Electros and half-tones	645 66	
Library	68 81	
Slides and drawings	977 98	
Educational Leaflets	528 75	
Bird-Lore to members	1,804 51	
Bird Books	1,017 72	
Colored plates in Bird-Lore	1,919 60	
Outlines	365 00	
Field Glasses	353 50	
Contribution to Florida Audubon Society	225 00	
Summer-school work	478 17	
Press Information and Publicity	2,326 26	
Feeding birds during snow storm	950 11	
		24,826 98
General Expenses—		
Office Assistants	$7,436 83	
Telegraph and telephone	226 29	
Postage	2,045 82	
Office and storeroom rents	1,920 00	
Motion pictures	210 10	
Legal services	302 37	
Auditing	125 00	
Envelopes and supplies	548 43	
Miscellaneous	747 20	
Cartage and expressage	328 37	
Insurance	110 30	
	$14,000 71	
Amount carried forward		$32,111 68

INCOME AND EXPENSE ACCOUNT—General Fund, continued

Amount brought forward		$32,111 68
Expenses brought forward	$14,000 71	
General Expenses, continued—		
Electric light	49 20	
Sales Department	752 49	
Depreciation on boats	344 23	
Depreciation on office furniture	192 34	
Exchange on checks	29 79	
Annual Meeting expense	221 37	
Stencils, Addressograph Machine	36 52	
New Members expense	4,225 41	
		19,852 06
Total Expenses		$51,963 74
Balance Surplus for year		663 47
		$52,627 21

INCOME

Members' Dues		$15,120 00
Contributions		10,133 71
Interest from Investments		19,574 66
Sales—		
Educational Leaflets Sales	$4,148 99	
Field Glasses	851 10	
Sales of Slides	486 05	
Bird-Lore Subscriptions	839 49	
Bird Book Sales	1,473 21	
		$7,798 84
		$52,627 21

MRS. RUSSELL SAGE FUND

INCOME AND EXPENSE ACCOUNT

Exhibit C

INCOME—		
Balance unexpended October 19, 1915	$3,476 30	
Contribution of Mrs. Russell Sage	5,000 00	
Junior Members' Fees	1,946 90	
		$10,423 20
EXPENSES—		
Administrative expenses	$450 00	
Furniture and fixtures	124 16	
Printing leaflet units for Junior Members	549 41	
Field Agents, salaries and expenses	1,159 69	
Expressage	61 60	
Printing circulars	86 87	
Printing envelopes	98 14	
Postage on circulars and literature	1,450 00	
Bird-Lore, subscriptions for Junior Classes	471 75	
Stenographic and clerical work	1,039 89	
Office supplies	63 39	
Buttons for Junior Members	224 49	
Half-tones for publication	13 91	
Report and publicity	360 53	
Colored plates in Bird-Lore	124 40	
Miscellaneous	21 10	
	$6,299 33	
Balance unexpended October 19, 1916	4,123 87	
	$10,423 20	$10,423 20

EGRET PROTECTION FUND

INCOME AND EXPENSE ACCOUNT

Exhibit D

INCOME—		
Balance unexpended October 19, 1915	$711 26	
Contributions	2,858 75	
		$3,570 01
EXPENSES—		
Egret Wardens, salaries and expenses	$2,758 50	
Prosecutions	458 00	
Miscellaneous	21 60	
	$3,238 10	
Balance unexpended October 19, 1916	331 91	
	$3,570 01	$3,570 01

CHILDREN'S EDUCATIONAL FUND

INCOME AND EXPENSE ACCOUNT

Exhibit E

INCOME—		
Balance unexpended October 19, 1915	$1,180 68	
Contributions	20,000 00	
Junior Members' Fees	14,928 05	
		$36,108 73
EXPENSES—		
Administrative expenses	$1,050 00	
Field Agents, salaries and expenses	4,671 66	
Stenographic and clerical work	3,203 54	
Office supplies	354 35	
Furniture and fixtures	235 47	
Expressage on literature	606 29	
Postage on circulars and literature	4,878 38	
Printing leaflet units for Junior Members	3,808 99	
Printed circulars to teachers	519 63	
Bird-Lore for Junior Classes	3,546 69	
Half-tones for publication	57 77	
Reports and publicity	1,330 16	
Buttons for Junior Members	1,049 58	
Colored plates in Bird-Lore	397 75	
Printed envelopes	293 97	
Office rent	705 00	
Miscellaneous	125 25	
	$26,834 48	
Balance unexpended October 19, 1916	9,274 25	
	$36,108 73	$36,108 73

DEPARTMENT OF APPLIED ORNITHOLOGY

INCOME AND EXPENSE ACCOUNT

Exhibit F

INCOME—		
Balance unexpended October 19, 1915	$4,279 27	
Contributions	200 00	
Earnings by H. K. Job from public lectures	473 38	
Miscellaneous	75 00	
		$5,027 65
EXPENSES—		
Agent's salary and expenses	$3,264 87	
Motion-picture machine, cameras and films	1,188 65	
Miscellaneous	150 15	
	$4,603 67	
Balance unexpended October 19, 1916	423 98	
	$5,027 65	$5,027 65

STATEMENT OF RECEIPTS AND DISBURSEMENTS YEAR ENDING OCTOBER 19, 1916

Exhibit G

RECEIPTS—			
Income on General Fund		$52,507 21	
Endowment Fund		15,394 48	
Sage Fund		6,946 90	
Egret Fund		2,858 75	
Children's Educational Fund		34,928 05	
Department of Applied Ornithology		748 38	
Interest due October 19, 1915		120 00	
Total Receipts year ending October 19, 1916			$113,503 77
Cash Balance October 19, 1915			26,815 75
			$140,319 52
DISBURSEMENTS—			
Expenses on General Fund		$51,427 17	
Investment on Endowment Fund	$23,500 00		
Less—Received on account of Mortgages	7,500 00	16,000 00	
Expenses on Sage Fund		6,299 33	
Alaskan Fund		26 95	
Egret Fund		3,238 10	
Children's Educational Fund, Northern		26,834 48	
Department of Applied Ornithology		4,603 67	
Furniture Account		307 67	
Audubon Boats		650 00	
Unpaid Bills October 19, 1915		11,283 05	
Total Disbursements for year ending Oct. 19, 1916			$120,670 42
Cash Balance October 19, 1916			19,649 10
			$140,319 52

DR. F. A. LUCAS,
Acting President,
National Association of Audubon Societies,
New York City.

NEW YORK, October 25, 1916.

Dear Sir:—We have examined reports submitted by John H. Koch & Company, certified public accountants, on the accounts of the National Association of Audubon Societies for the year ending October 20, 1916. The account shows balance sheets of October 20, 1916, and income and expense account for the year ending the same date. Vouchers and paid checks have been examined by them in connection with all disbursements, and also the securities in the Safe Deposit Company. Yours very truly,

J. A. ALLEN,
T. GILBERT PEARSON,
Auditing Committee.

LISTS OF MEMBERS OF AND CONTRIBUTORS TO THE NATIONAL ASSOCIATION OF AUDUBON SOCIETIES

BENEFACTOR

*Albert Wilcox.....1906

FOUNDER

Mrs. Russell Sage.....1910

PATRONS

William P. Wharton.....1909
Miss Heloise Meyer.....1912
Anonymous.....1915

LIFE MEMBERS

Abbott, Clinton G.....1910
Adams, Mrs. George E.....1912
Agnew, Miss Alice G.....1916
Ahl, Mrs. Leonard.....1915
Alms, Mrs. Frederick H.....1913
Ames, Miss Mary S.....1916
Ams, Charles M.....1916
Andrews, Mrs. E. B.....1914
Andrews, J. Sherlock.....1916
Armstrong, Dr. S. T.....1913
Arnold, Benjamin Walworth.....1914
Arnold, Edward W. C.....1916
Ash, Mrs. Charles G.....1913
Auchmuty, Mrs. R. T.....1913
Austen, Mrs. Isabel Valle.....1914
Ayres, Miss Mary A.....1915
Babcock, Mrs. Perry H.....1912
Bacon, Mrs. Robert.....1912
Bancroft, William P.....1906
Barbey, Henry G.....1914
*Barnes, Miss Cora F.....1908
Barr, James H.....1916
Bartlett, Miss Florence.....1916
Bartol, Mrs. J. W.....1915
Bates, Mrs. Ella M.....1914
*Bates, Isaac C.....1910
Batten, George.....1911
Baylies, Mrs. N. E.....1912
Beebe, Mrs. J. Arthur.....1907
Beech, Mrs. Herbert.....1914
Bennett, Mrs. Alice H.....1914
Berwind, John L.....1915
Bigelow, Dr. William Sturgis.....1912
Bingham, Miss Harriet.....1907
Black, R. Clifford.....1916
Blake, Mrs. Francis.....1916
Bliss, Miss Catharine A.....1911
Bliss, Robert Woods.....1915
Bliss, Mrs. William H.....1912
Boardman, Miss Rosina C.....1916
Boettger, Robert.....1916
Bolling, Mrs. Raynal C.....1909
Borden, Miss Emma L.....1914
Bowdoin, Miss Edith G.....1911
Bowdoin, Mrs. Temple.....1911
*Bowman, Miss Sarah R.....1905
Brackenridge, George W.....1916
Brewster, William.....1905
Bridge, Mrs. Lidian E.....1907
Brooks, A. L.....1906
Brooks, Mrs. Everett W.....1907
Brooks, Miss Fanny.....1913
Brooks, Gorham.....1911
Brooks, Peter C.....1911
Brooks, Shepherd.....1907
Brooks, Mrs. Shepherd.....1906
Brown, Miss Annie H.....1914
Brown, T. Hassall.....1913
Browning, J. Hull.....1905
Burnham, William.....1916
Burr, I. Tucker.....1915
Butler, Mrs. Paul.....1916
Butterworth, Frank S., Jr.....1915
Butterworth, Mrs. William.....1916
Cabot, Mrs. A. T.....1913
Camden, J. N.....1914
Camden, Mrs. J. N.....1914
Campbell, Miss Helen Gordon.....1909
Campbell, John Boylston.....1916
Carhartt, Hamilton.....1916
Carr, General Julian S.....1907
Cary, Miss Kate.....1916
Case, Miss Louise W.....1914
Chapin, Chester W.....1910
Chapman, Clarence E.....1908
Chase, Mrs. Philip A.....1913
C.———, E. S.....1913
Childs, Eversley.....1916
Childs, John Lewis.....1905
Clark, George H.....1916
Clarke, Mrs. W. N.....1912
Clementson, Mrs. Sidney.....1916

*Deceased.

LIFE MEMBERS, continued

Clyde, William P. 1905
Colburn, Miss Nancy E. 1915
Colgate, Richard M. 1916
Collins, Thomas H. 1916
Comstock, Miss Clara E. 1914
Converse, Mrs. Costello C. 1915
Converse, E. C. 1916
Coolidge, J. Randolph 1913
Coolidge, Oliver H. 1912
Coolidge, T. Jefferson, 3rd 1907
Cotton, Miss Elizabeth A. 1915
Covell, Dr. H. H. 1916
Cowl, Mrs. Clarkson 1916
Crabtree, Miss Lotta M. 1912
Crocker, Mrs. Emmons 1912
Crosby, Maunsell S. 1905
Cross, Mrs. R. J. 1915
Crozier, Mrs. J. Lewis 1908
Cudworth, Mrs. F. B. 1911
Cutting, Mrs. W. Bayard 1913
Dahlstrom, Mrs. C. A. 1916
Dane, Edward 1912
Dane, Ernest Blaney 1913
Dane, Ernest Blaney, Jr. 1912
Dane, Mrs. E. B. 1913
Davis, David D. 1911
Davis, William T. 1910
Davol, Miss Florence W. 1916
Day, Mrs. Frank A. 1915
Dean, Charles A. 1916
Deering, Charles 1913
Depew, Chauncey M., Jr. 1915
District of Columbia Audubon Society 1915
Dodge, Cleveland H. 1916
Doepke, Mrs. William F. 1916
Dows, Tracy 1914
Draper, Mrs. Henry 1913
Drummond, Miss Mary 1915
Duer, Mrs. Denning 1915
Earle, Carlos Y. Poitevent 1905
Earle, Miss E. Poitevent 1905
Eastman, George 1906
Eddison, Charles 1916
Edgar, Daniel 1908
Elliot, Mrs. J. W. 1912
Ellsworth, James W. 1915
Emmons, Mrs. R. W., 2nd 1908
Endicott, H. B. 1908
Everett, Miss Dorothy B. 1916
Farrel, Mrs. Franklin 1913
F. ——— E. D., In Memoriam 1914
*Farewell, Mrs. John V., Jr. 1909
Fay, Dudley B. 1913
Fay, Mrs. Flora Ward 1905
Fenno, Mrs. L. Carteret 1913
Field, Cortlandt deP. 1915
Fincke, William Mann, Jr. 1916
Fleischmann, Julius 1913
Flint, Mrs. Jessie S. P. 1913
Foot, James D. 1907
Forbes, Mrs. William H. 1914
Forbush, Edward Howe 1910
Ford, James B. 1913
Freeman, Mrs. James G. 1915
French, Miss Caroline L. W. 1911
*Frothingham, Howard P. 1905
Frothingham, John W. 1913
Gallatin, F., Jr. 1908
Garneau, Joseph 1913
Gazzam, Mrs. Antoinette E. 1908
Gifford, Mrs. Robert L. 1908
Gladding, Mrs. John Russell 1914
Glazier, Henry S. 1916
Goodwin, Walter L., Jr. 1914
Grant, W. W. 1910
Gray, Miss Elizabeth F. 1915
Graydon, Mrs. Clendeny 1913
Greenway, Mrs. James C. 1912
Grew, Mrs. H. S. 1913
Griswold, Mrs. William E. S. 1915
Haehnle, Reinhold 1912
Hamlin, Mrs. Eva S. 1916
Hanna, Mrs. H. M., Jr. 1916
Harbeck, Mrs. Emma Grey 1916
Harrah, Mrs. Charles J. 1913
Harral, Mrs. Ellen W. 1914
Harrison, Alfred C. 1914
Hasbrouck, H. C. 1915
Haskell, J. Amory 1916
Havemeyer, Mrs. H. O., Jr. 1907
Hawkins, Rush C. 1913
Hazard, Mrs. J. N. 1916
Hearst, Mrs. P. A. 1909
Hemenway, Augustus 1915
Hemenway, Mrs. Augustus 1905
Hentz, Leonard L. 1914
Higginson, Mrs. James J. 1916
Hill, Hugh 1915
Hitch, Mrs. Frederic Delano 1915
Hoff, Mrs. Grace Whitney 1915
Hoffman, Samuel V. 1907
Hopewell, Frank 1911
Hornbrooke, Mrs. Frances B. 1913
Hostetter, D. Herbert 1907
Houghton, Miss Elizabeth G. 1914
Howard, Miss Edith M. 1915
Hubbard, Joshua C., Jr. 1915
Hubbard, Richard 1915
Hunnewell, H. S. 1905
Hunnewell, Walter 1915
Huntington, Archer M. 1905
Jackson, Mrs. James 1908
Jamison, Margaret A. 1914
Jenkins, Mrs. Joseph W. 1916
Jones, Jerome 1915
Keen, Miss Florence 1916
Keith, Mrs. D. M. 1916
Kettle, Mrs. L. N. 1913
Kidder, Nathaniel T. 1905
Kilmer, Willis Sharpe 1907
King, Miss Ellen 1915
Kingsbury, Miss Alice E. 1916
Kinney, Morris 1913

*Deceased.

LIFE MEMBERS, continued

Kittredge, Miss Sarah N. 1914
Knight, Miss A. C. 1913
Kuser, John Dryden 1911
Lane, Benjamin C. 1909
Lang, Albion E. 1916
Langdon, Woodbury G. 1916
Lansing, Mrs. G. Y. 1916
Lawrence, Emben 1916
Lawrence, Rosewell B. 1916
*Lawrence, Samuel C. 1905
Lefferts, M. C. 1914
Loring, Mrs. W. Caleb 1913
Low, Miss Nathalie F. 1916
Loyd, Miss Sarah A. C. 1914
McClymonds, Mrs. A. R. 1914
McConnell, Mrs. Annie B. 1908
McGraw, Mrs. Thomas S. 1908
McLane, Guy R. 1916
Mackey, Clarence H. 1908
MacLean, Mrs. Charles F. 1916
Mallery, Mrs. Jane M. 1914
Marmon, Mrs. Elizabeth C. 1916
Marshall, Louise 1906
Marshall, Thomas K. 1915
Mason, Miss Ellen F. 1913
Mason, Miss Fanny P. 1912
Mason, George Grant 1914
Massachusetts Audubon Society 1915
Mead, Mrs. Charles Marsh 1915
Meloy, Andrew D. 1910
Merriman, Mrs. Daniel 1915
Merrill, Miss F. E. 1913
Mershon, Hon. W. B. 1914
Meyer, Miss Heloise 1910
Miller, Mrs. E. C. T. 1916
Mitchell, Mrs. John G. 1916
Mitchell, Miss Mary 1916
Moore, Clarence B. 1909
Moore, Mrs. William H. 1916
Morison, Robert S. 1916
Morton, Miss Mary 1906
Murphy, Franklin 1909
Neave, Miss Jane C. 1916
Nevins, Mrs. Davis 1916
Newberry, W. F. 1916
New Jersey Audubon Society 1913
Newman, Mrs. R. A. 1914
Nichols, Mrs. William G. 1915
North Carolina Audubon Society 1905
Oliver, Mrs. James B. 1916
*Osborn, Mrs. Eliza W. 1906
Osborn, Mrs. William C. 1916
Palmer, Mrs. William H. 1912
*Palmer, William J. 1906
Parker, A. H. 1908
Parker, Edward L. 1909
Parsons, Miss Mary W. 1913
Peabody, George A. 1914
Pearson, T. Gilbert 1905
Peck, Mrs. Walter L. 1909
Perkins, Miss Ellen G. 1914
Perkins, Mrs. George C. 1913
Peterson, Arthur 1916
Phelps, Mrs. J. W. 1914
Phillips, Mrs. Eleanor H. 1908
Phillips, John C. 1905
Phillips, Mrs. John C. 1905
Pickman, Mrs. Dudley L. 1907
Pierrepont, Anna J. 1905
Pierrepont, John J. 1905
Pierrepont, Mrs. R. Stuyvesant 1914
*Pinchot, Mrs. J. W. 1906
Poland, James P. 1909
Pomeroy, Mrs. Nelson 1915
Potts, Thomas 1905
Pratt, George D. 1911
Prentiss, F. F. 1916
Prime, Miss Cornelia 1909
Quincy, Mrs. H. P. 1915
Rainsford, Dr. W. S. 1913
Rathborne, Richard C. 1916
Reed, Mrs. William Howell 1905
Remsen, Miss Elizabeth 1916
Renwick, Mrs. Ilka H. 1914
Reynolds, R. J. 1908
Roberts, Miss Frances A. 1914
Rockefeller, William G. 1912
Rodewald, F. L. 1916
Roebling, Mrs. John A. 1916
Rogers, Charles H. 1912
Rogers, Dudley P. 1914
Ropes, Mrs. Mary G. 1913
Russell, Mrs. Gordon W. 1914
Sage, Mrs. Russell 1905
Saltonstall, John L. 1908
Sanger, Mrs. C. R. 1916
Satterlee, Mrs. Herbert L. 1906
Schley, Grant B. 1914
Schroeder, Miss Lizzie H. 1911
Seabury, Miss Sarah E. 1915
Seaman, L. W. 1912
Sears, William R. 1915
Severance, John L. 1916
Sharpe, Miss Ellen D. 1915
Shattuck, Mrs. F. C. 1906
Sherman, Miss Althea R. 1909
Sibley, Hiram W. 1915
Slattery, John R. 1916
*Smith, Miss Alice Weston 1911
Spalding, Mrs. Amanda M. 1912
"Iowa Friend" 1916
Stetson, Francis Lynde 1916
Stewart, Mrs. Edith A. 1913
Stickney, Charles D. 1910
Stillman, B. G. 1916
Stillman, Chauncey D. 1916
*Stokes, Miss Caroline Phelps 1908
Stone, Miss Ellen J. 1914
Stuart, F. A. 1916
Taft, Elihu B. 1911
Taylor, Charles H., Jr. 1908
Thaw, J. C. 1916
Thayer, Mrs. Ezra R. 1909
Thayer, John E. 1909

*Deceased.

LIFE MEMBERS, continued

Thompson, Mrs. Frederick F.....1908
*Thorn, Mrs. Augusta C.....1913
Tingley, S. H.....1914
Torrey, Mrs. Alice W.....1913
Tuckerman, Alfred.....1915
Tufts, Leonard.....1907
Tyson, Mrs. George.....1915
Underwood, H. O.....1916
Upson, Mrs. Henry S.....1916
Van Brunt, Mrs. Charles.....1912
Vanderbilt, Mrs. French.....1914
Van Name, Willard G.....1905
Vaux, George, Jr.....1905
Wade, Mrs. J. H.....1914
Wadsworth, Clarence S.....1911
Wakeman, Miss Frances.....1915
Wallace, Mrs. Augusta H.....1914
Ward, Charles Willis.....1916
Ward, Marcus L.....1908
Watson, Mrs. J. Henry.....1916
Watson, Mrs. James S.....1911
Webb, J. Griswold.....1913
Webster, F. G.....1905
Webster, Mrs. Sidney.....1913
Weeks, Henry De Forest.....1909
Weld, Miss Elizabeth F.....1916
Wells, Mrs. Frederick L.....1911
Westcott, Miss Margery D.....1912
Wetmore, George Peabody.....1914
Wharton, William P.....1907
White, Mrs. Charles T.....1909
White, Windsor T.....1916
Williams, John D.....1909
Wood, Mrs. Antoinette Eno.....1913
Woodman, Miss Mary.....1914
Woodward, Mrs. George.....1908
Woolman, Edward.....1916
Wyman, Mrs. Alfred E.....1914

*Deceased.

ANNUAL MEMBERS AND CONTRIBUTORS TO THE GENERAL FUND

Abbe, Miss H. C.	$5 00	Allee, Miss Jean H.	$5 00	Arnold, Rev. H. G.	$1 00
Abbey, Mrs. F. R.	5 00	Allen, Atkinson	5 00	Arnold, Miss Mittie	5 00
Abbot, Miss M. S.	5 00	Allen, Charles D.	5 00	Arnold, W. D. I.	1 00
Abbott, Elizabeth T. and Hope	2 00	Allen, Clarence J.	5 00	Arnold, Mrs. W. J.	5 00
Abbott, Mrs. F. V.	5 00	Allen, C. L.	5 00	Aronstein, Mrs. S.	5 00
Abbott, Holker	1 00	Allen, Mrs. D. P.	5 00	Arthur, James B.	5 00
Abbott, Mrs. T. J.	5 00	Allen, Miss E. H.	5 00	Ashley, Miss E. M.	5 00
Abbott, W. H.	5 00	Allen, Miss Lucy E.	1 00	Ashley, Miss M. P.	5 00
Abrams, Mrs. A. E.	2 00	Allen, Miss Mary W.	5 00	Aspinwall, John	10 00
Achilles, Mrs. G. S.	5 00	Allison, Mrs. M. D.	1 00	Asten, Mrs. E.	5 00
Ackerman, Mrs. M. S.	5 00	Alsop, Miss G. F.	5 00	Astor, Vincent	5 00
Ackley, Miss A. E.	5 00	Althouse, H. W.	5 00	Atkins, Mrs. E. F.	5 00
Acton, Miss A. A.	5 00	Alvord, George B.	5 00	Atkinson, Miss M.	1 00
Adams, Mrs. A. L.	5 00	Ames, Miss H. S.	5 00	Atwater, Charles B.	5 00
Adams, Brooks	20 00	Ames, Mrs. J. B.	10 00	Atwater, Mrs. W. C.	5 00
Adams, Mrs. Brooks	5 00	Amory, John S.	5 00	Auchincloss, Mrs. E. S.	5 00
Adams, C. Q.	10 00	Ams, Charles M.	5 00	Auchincloss, J. W.	5 00
Adams, Edward B.	5 00	Anderson, Mrs. B.	5 00	Audubon Bird Club of Minneapolis	5 00
Adams, Miss E. B.	5 00	Anderson, J. C.	5 00	Audubon, Miss M. E.	5 00
Adams, Mrs. E. E.	5 00	Anderson, Mrs. J. C.	10 00	Audubon Society of Evansville, Ind.	5 00
Adams, H. W.	5 00	Andrews, Mrs. H. E.	5 00	Audubon Society of Fort Smith	5 00
Adams, Mrs. J. D.	5 00	Andrews, Col. J. M.	5 00	Audubon Society of Illinois	5 00
Adams, Mrs. M. W.	5 00	Andrews, Miss K. R.	5 00	Audubon Society of Missouri	5 00
Adams, Thomas M.	20 00	Andrews, Mrs. M.	5 00	Audubon Society of New Hampshire	5 00
Adams, William C.	1 00	Andrews, W. H.	5 00	Audubon Society of Sewickley Valley	10 00
Adler, Max A.	10 00	Angstman, Mrs. C. S.	5 00	Audubon Society of Western Penna.	5 00
Adt, Albert A.	2 00	Anonymous	26 00	Auerbach, Jos. S.	5 00
Agassiz, R. L.	30 00	Anthony, A. W.	5 00	Augusta Bird Club	5 00
Ahruke, Carl J. R.	5 00	Anthony, Miss E. J.	5 00	Ault, L. A.	5 00
Aichel, Oskar G.	5 00	Apgar, Mrs. A. S.	5 00	Austin, Francis B.	5 00
Aiken, John A.	5 00	Appleton, Miss M. E.	5 00	Averill, Miss F. M.	2 00
Aims, Miss Edith M.	5 00	Appleton, Wm. S.	5 00		
Ainsworth, Mrs. H. A.	5 00	Archbald, Jos. A.	5 00		
Aldrich, E. Frank	5 00	Archbold, John D.	5 00		
Aldrich, Frank W.	5 00	Archer, Mrs. G. A.	5 00		
Aldrich, Mrs. J. H.	5 00	Arizona Audubon Society	5 00		
Aldrich, Spencer	5 00	Armstrong, Mrs. C. R.	5 00		
Aldridge, Geo. W.	5 00	Arnold, Mrs. G. C.	5 00		
Alexandre, Mrs. J. J.	5 00				

ANNUAL MEMBERS AND CONTRIBUTORS, continued

Avery, Samuel P.....$10 00
Avis, Edward..... 5 00
Ayer, C. F..... 5 00
Ayer, Mrs. E. E..... 10 00
Ayres, Harry M..... 5 00
Babcock, W. I..... 5 00
Baber, Mrs. C..... 5 00
Bacon, Miss E. S..... 5 00
Bacon, Mrs. F. E.... 10 00
Bacon, Miss H. R.... 5 00
Bacon, The Misses.. 2 00
Bacon, Miss M. P... 5 00
Badger, Arthur C... 5 00
Badger, Lester R. .. 5 00
Bailey, Mrs. Chas.... 5 00
Bailey, Dr. Pierce... 5 00
Bailey, S. I..... 1 00
Bainbridge, Mrs. M. H..... 5 00
Baird, Thos. E., Jr... 5 00
Baker, Miss C. S..... 5 00
Baker, George L..... 5 00
Baker, Miss M. K... 5 00
Baker, W. E..... 5 00
Bakewell, Miss M. P. 5 00
Balch, Mrs. Geo. R.. 10 00
Balch, Henry G..... 5 00
Baldwin, Mrs. A. D.. 5 00
Baldwin, A. H..... 5 00
Baldwin, Charles L.. 5 00
Baldwin, Mrs. C. R. 5 00
Baldwin, George J... 5 00
Baldwin, James..... 5 00
Baldwin, Roger N... 3 00
Baldwin, S. P..... 2 50
Baldwin, Miss S. R... 5 00
Baldwin, W. D..... 5 00
Balkam, Mrs. W. F.. 5 00
Ball, Miss Alice E... 15 00
Ball, Miss Helen A... 5 00
Ball, Miss Susan L... 5 00
Ball, T. Arthur..... 5 00
Bamberger, Miss.... 5 00
Bancroft, Mrs. S..... 5 00
Bangs, F. R..... 5 00
Banks, The Misses.. 5 00
Banton, Mrs. E. H... 5 00
Barber, Mrs. F. C.. 5 00
Barber, Mrs. H..... 25 00
Barber, W. V..... 1 00
Barclay, Miss E..... 5 00
Barksdale, H. M.... 5 00
Barlow, Mrs. F. C... 10 00
Barnard, Hon. Job.. 5 00
Barnes, Prof. H. T.... 5 00
Barnes, J. Sanford... 5 00
Barney, Mrs. C. T... 5 00
Barney, Mrs. J. S.... 5 00
Barnum, Miss H. A. 5 00
Barnum, W. M..... 5 00
Barnum, Mrs. W. M. 5 00
Barr, Miss C. F..... 5 00
Barr, Miss C. B..... 5 00
Barr, Mrs. T. F..... $1 00
Barrere, Masters Claude and Gabriel 1 00
Barrett, Mrs. R. R... 5 00
Barrett, W. H..... 5 00
Barrie, Mrs. E. S.... 5 00
Barron, Geo. D..... 5 00
Barrows, Mrs. F. K.. 5 00
Barrows, Ira..... 5 00
Barrows, Mrs. M.... 5 00
Barry, Anna K..... 5 00
Barstow, Mrs. F. Q.. 5 00
Barstow, Mrs. W. A. 5 00
Bartlett, Mrs. C. T... 5 00
Bartlett, Mrs. Hy..... 5 00
Bartlett, Master William T..... 1 00
Bartol, Miss E. H.... 5 00
Bartol, Mrs. H. G... 5 00
Barton, Mrs. F. O... 5 00
Barton, Mrs. H. H., Jr..... 5 00
Bass, Mrs. Perkins.. 5 00
Batchelor, Miss Inez 5 00
Battles, Miss C. E... 5 00
Baumann, Mrs. A. V..... 5 00
Bausch, W..... 5 00
Baxter, H. F..... 5 00
Bayer, Mrs. E. S..... 5 00
Bayne, Howard..... 5 00
Bayne, Mrs. L. P.... 5 00
Bayne, Paul..... 5 00
Beach, Mrs. Henry H. A..... 5 00
Beacom, M. W..... 5 00
Beadleston, A. N.... 10 00
Beal, Mrs. J. H..... 5 00
Beall, Mrs. I. A..... 5 00
Beardslee, J. C..... 5 00
Beardslee, Mrs. L. R. 5 00
Beaux, Miss Cecilia. 5 00
Beaver, F. P..... 5 00
Beaver Field Club (The)..... 5 00
Beckett, Mrs. C. H.. 5 00
Beckwith, T., Jr..... 5 00
Bedford Audubon Society (The)..... 5 00
Beer, Mrs. Geo. L... 5 00
Beer, Mrs. Julius.... 5 00
Bell, Mrs. Gordon... 5 00
Bell, Miss M. K..... 5 00
Beller, William F.... 5 00
Bellinger, Mrs. E. J. 5 00
Bement, Mrs. Gerard 5 00
Bement, Mrs. G. F.. 5 00
Bemis, Alfred F..... 5 00
Bemis, Mrs. F. B.... 5 00
Bemish, Mrs. W. H.. 5 00
Benedict, Miss C. J.. 5 00
Benedict, Theo. H... 5 00
Benet, Miss Lillian.. 5 00
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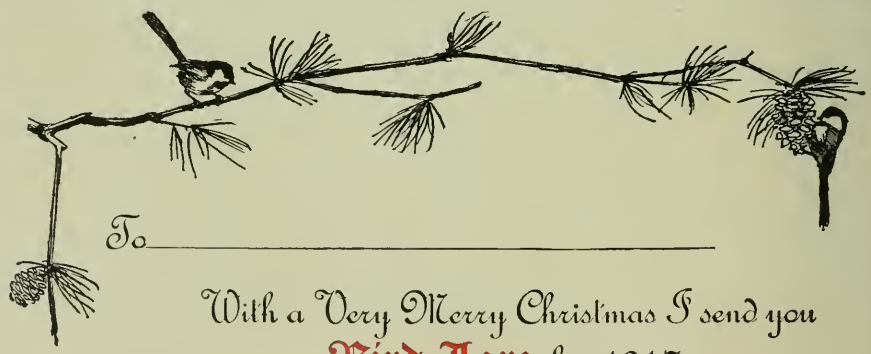

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